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## CRIME AND PSYCHIATRY

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Contact between the psychiatrists and those of the legal profession should stimulate members of both professions to seek not only a remedy to the problem of crime, but to search diligently for the etiological factors. Crime has never been properly understood, possibly because it is so difficult to be dispassionate in our consideration of it, probably due to our emotional reaction when anyone interferes with our individual rights or with the rights of the society in which we live. In spite of the fact that it has been quite definitely proven that punishment does not ameliorate the situation, we still consider it the proper procedure. Humanity still demands that the criminal suffer, the degree depending upon how much the collective ego of the social group has been offended. Karpman considers crime a search for a fuller expression in the life of the criminal, no matter how aberrant. Therefore it would seem that it should be understood, and not condemned. Although much literature has been published about the criminal, it has mostly dealt with his intellectual ability rather than with the motivation behind the crime and the etiological factors which arouse the motivating force.

Statistics in regard to crime are difficult to obtain, as are all statistics which deal with a geographically widespread and an economically varied society numbering many millions of people. Many of the offenses against the law, particularly those of a minor type, are not reported. Often the criminal is not apprehended. As a simple example we may question how many people pay blackmail because of fear of exposure, should they

seek the aid of the police? How many people refuse to report a crime because it is committed by a relative or a friend whom they hesitate to report? How many sexual offenses are committed and not reported, either because the act is mutual or because of a feeling of shame? Why do we have criminals? Inherent drives may obtain satisfaction in the profession which an individual chooses; even the primitive desire to kill finding release in the lives of the butcher or the professional soldier.

A criminal is a man who is unable to subjugate his personal desires for the good of society. This inability to withhold the realization of personal desire until some future date, or to give it up entirely for the welfare of the group, may be considered an abnormality and is a primitive reaction to life situations. There are several methods through which this satisfaction can be obtained and these are the situations under which crime is committed. The method of obtaining these personal desires may be through passion with an intense emotional reaction and rapid commitment of the crime; through impulse with rapid commitment of the crime without intense emotion; or through premeditation during which there is practically no emotion and a carefully thought out plan of activity. When a personal desire is not realized, there is often present a strong emotional coloring unless, the forces behind this desire are sublimated and thus releasing the pain through some substituted field of activity. Probably the strongest emotion which plays an important factor is fear, an emotion which almost invariably demands an immediate release. Will-to-power is probably the precipitating factor to some degree in those crimes in which premeditation plays an important role.

I cannot agree with some of the psycho-

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analysts, who feel that crime is caused by a sensation of guilt, in which the individual commits an offense against the law so that he would be punished, that through this punishment he may atone for some unconscious conflict, highly colored with feelings of guilt, usually based on sexual trauma or abnormal fixations at early sexual levels according to the Freudian theory of sexual development. Since the greater part of the population offends against the psychoanalytical laws of life at some time in their childhood it would seem that were this true the incidence of crime would be so great that there would not be enough people left to see that the laws were enforced. No matter how carefully we search for the etiological psychic factor of crime, we find that we can come to no scientific answer, but that we are still working in the field of philosophy. We must be careful that progress is not hindered by accepting one theory or another in which there are flaws in logic. However, theories must be presented and these must be carefully studied with detailed analysis of the criminal himself before we can arrive at any acceptable conclusion.

I wish to say a little more about fear being the motivating force behind many of our reactions. One must be careful to differentiate fear from terror since fear may be a prolonged reaction sometimes lasting throughout the life of the individual, the individual at times being barely aware that he is suffering from a destructive emotional reaction. In early times it merely involved the physical life of the individual but with the advancement of our present economic and cultural civilization, it has assumed a much wider range of importance, involving the loss of personal property, prestige, social relationships and all factors which are necessary to maintain a given position in life. There may be also involved a fear of not being able to obtain one's ideals, ideals which may change with every decade of life. Crimes committed by the insane are based on the same fundamental factors, but in the insane the behavior is activated by a false premises in no way acceptable to existing facts.

In considering the etiological factors which

cause the individual to react in an antisocial manner toward his driving emotions, the psychiatrist feels that it is necessary to delve in the early life of the criminal. A few are inherently psychopathic and are not amenable to social or psychiatric treatment. However, these are greatly in the minority and cannot be considered as comprising the bulk of the criminal population. Another small number are mentally defective and are often the tools of more intelligent men who carefully plan out their activities and who use the defective, born without normal inhibitions and with inability to reason, to carry on the mechanical end. Since these mentally defectives are highly suggestible, they will often become law abiding under the influences of an ideal social environment, but they again readily succumb to criminal suggestion when these social influences are removed. Our present psychiatric knowledge offers no hope for the rehabilitation of the criminal with a psychopathic personality. His inherent egocentricities are so great that his life is a law unto itself, and he fails to recognize the rights of others. All psychopaths are not criminals but they are always antisocial and their behavior is such that they cannot adjust to group life. As far as present knowledge goes the condition is probably inherited and is caused by the predominance of a primitive emotional state in which the forces of self-preservation and will-to-power are so prominently developed that it is impossible to impose upon such a personality the inhibitions that are necessary for a successful life in the group. Let us in our further discussion eliminate the mentally defectives and the psychopaths who constitute a minority, and who present a heredito-biological problem rather than a social, purely physiological, or a psychotic one. The best that can be done for them is to remove them from society or if this is not feasible to create proper supervision in an environment where the opportunity to commit crime is at its minimum. But there still remains a large group of criminals who are not psychopaths and who are not mentally defectives. Could it be possible that the struggle which primitive



man underwent to maintain his life, which is now carefully guarded by society, has not been properly compensated for? Is it possible that the early physiological equipment to meet this struggle is still present in the human race and that a certain amount of danger is necessary for a healthy emotional life? But this is largely philosophical and in no way answers, at least at the present time, why the criminal chooses that particular mode of life which is contrary to the activity of the group even though man is primarily a gregarious animal. Let us briefly mention a group which makes up a certain small percentage of those who commit offenses of a minor type to escape immediate ruin either for themselves or their family group; however, whether we here deal with petty stealing to avert starvation or actual felony to maintain a certain standard of living, the motivating force is the same; namely, fear of losing what the individual ego feels is necessary for successful living. The degree of the crime is determined by the standards of living which have become habitual to the individual committing the offense.

The law recognizes the force produced by fear when self-protection becomes necessary only in its most primitive form; that is, self-protection against bodily harm or against property rights and then only when the situation at the moment allows for no other means of self-defense than actual assault. Could cold and hunger be eliminated from our social life, a small percentage of crime would become a matter of past history; unfortunately simply adequate food and warmth is not all that is considered essential for adequate living. We, a young and aggressive country, have elevated our standards of living to such a height that it would be impossible for any system of relief to meet the demands which the average American citizen considers as adequate to meet the necessities of life. We might at this point become idealistic and claim that we should train the population to become satisfied with a simpler life. We might advocate the theories of Socialism, but I do not believe that this is a solution to the problem.

I have no statistics as to whether the incidents of crime is less in Socialistic countries nor do I know whether such statistics can be obtained. Yet it is undoubtedly true that if we are going to lower the standards of living and at the same time satisfy the social group, these standards must be lowered for all people and not only for an underprivileged class, since in the latter case there would only be a feeling of resentment, fear of further oppression and more crime. At the present time it seems necessary to continue our efforts to lessen the incidents of crime under our present social system although it seems undoubtedly true that tremendous upheavals are in progress. Under such a situation it would seem that individual education, the aim of which would be to adapt the individual to live harmoniously in any social group or system, would be the only solution. Education, beginning early in childhood, with the aim of developing a respect for the individual as well as property rights of others, with an early understanding of the individual, of his own possibilities and limitations, and with the elimination of all factors which may cause starvation or actual physical hazards due to lack of necessities should help to produce a sense of security among the people with its accompanying contentment with life, and should help eliminate some of the factors which cause fear and thereby lessen the number of antisocial acts. Eliminating those factors, the deprivation of which strike at the very fundamentals of life, we still have a large group who commit crimes for no apparent reason. Lombroso's theory of a definite criminal type has been disproved. The anthropological factors in criminals differ in no material way from those of the population as a whole. What manner of man then is the criminal who refuses to follow the natural order of society and who is not deterred by the severity of punishment. How can we adequately explain the fluctuations in crime which appear at various intervals? Are these fluctuations local, national or international? Are they based on group psychological aspects caused by national or world economic or social forces? These questions it seems to me are

still to be adequately answered. Again I repeat that the only solution which I can see, and this solution is only partial, is to educate the individual from early childhood to appreciate the fact that he must of a necessity live in a group, that his ultimate good is obtained by following the laws which seem to be best for the welfare of the majority of the group and that to adjust in society as a whole he must develop certain inhibitions and sublimate certain desires the realization of which will be contrary to those mores which the group has set up as being essential for society's highest development. He must learn that the development and welfare of society as a whole is of more importance than that of the individual. He must learn that primitive behavior is not acceptable and is not compatible with his own welfare in our present social standards. He must also realize that the postponement of realizations of natural desires produces a far greater reward in our present civilization than immediate realization. This education of the individual must start at infancy and to do so we must investigate the home life of the child. It is essential that the early emotional life of the child should be normal and should develop equally with his physical life. The child-parent relationship should be that of protection and mutual respect with a gradual training of the child which enables him to break away from the family group and become an individual who is self sustaining in a social manner. Throughout early life the child should have a sense of security so that the emotion of fear does not become habitual. Such a task is tremendous and we can only ask whether at an early age we can recognize a condition which may be characterized as a predelinquent state. It is probably that state in the development of the individual, whether a child or an adult when inadequate or abnormal emotional reaction is noted. If this reaction is abnormal we are probably dealing in many cases with a psychopathic or prepsychotic individual. Possibly one factor most noted in the criminal and precriminal states is an emotional flattening and a gradual development of egocentricity, factors which are usually caused by difficulties in

the early environmental life. If this be the case, etiological factors which cause the criminal and so-called functional neurotic, psychotic, and maladjusted individuals are identical. Even imitation of parental disregard for the law produces an emotional reaction which may follow three courses. The child may follow the life pattern of the parent. He may react adequately to the unsatisfactory situation because of outside forces and become a law abiding citizen, or he may over react to the situation and become a bigot in his demands of over adherence to social customs and over meticulous in his own behavior, even progressing to such an extent that he himself becomes psychotic. The type of reaction will probably depend upon the emotional situation between the child and the rest of the family group. At the present time we can only look to the support of the school system to overcome the adverse situations found in the home and to produce in the child a feeling of security and social order.

Inherent defects may also cause a child to react in an unsatisfactory manner even though the home situation is not at fault, since these defects make it impossible for the child to compete on equal terms with the majority of the social group in which the child finds himself. Our educational system has been rather backward in accepting the fact that every child feels an inherent need to equal in some sphere the fellows in his group. If he is unable to attain this end a feeling of inadequacy develops with an accompanying fear of failure and a child may seek some antisocial means of establishing his personality, so developing delinquent habits which eventually turn into a criminal life. In recent years much work has been done in regard to reading disabilities based on mild degrees of cerebral reversal. Since reading is such an important factor in the educational system, a child normal intellectually who is suffering from such a defect may realize its severe handicap in his educational work. This difficulty is amenable to treatment and many child guidance clinics can offer case after case in which the behavior has markedly improved after the dif-

ficulty has been overcome. Until fairly recent years our school curriculum was more of a college preparatory course. The limited but non-defective child was not taken into consideration and he often went through years of training only to leave the school poorly prepared to meet the competition of life. It is estimated that about 200,000 children appear before the juvenile courts yearly. This does not comprise any way near the total number of delinquents. The state of maladjustment before the onset of criminal tendencies is the time for therapeutic efforts.

Our modern penal system does not seem to lend itself to permanent rehabilitation as far as can be determined. Unfortunately when leaving the prison the criminal must face the same factors which were present at the time of committing the crime with the added stigma of social disapproval. He has often not been given an opportunity to rehabilitate himself. The average employer is suspicious and suffers from an overly developed sense of self-protection. Even in our own state institution in Delaware applicants for positions are finger printed and are not accepted as employees if they have at any time come in conflict with the law. Even if a former criminal should wish to maintain himself in an honest fashion he is handicapped by social factors. Moreover he has to overcome within himself the antisocial habits which he has acquired, particularly if he has found it possible to obtain his livelihood by working a few hours rather than by day after day of tedious labor. We have in our present society placed a premium on the desire to work as being a laudable trait. Unfortunately this trait is acquired and is not inherent in men who in early times only worked to obtain the necessities of life and who did not consider it a characteristic to be praised by the group.

Another group of criminals who comprises probably a greater number than realized are those who are psychotic or in a prepsychotic state. Far too little study has been made regarding the criminal tendencies of the insane. In a study made at the Eloise State Hospital, in Michigan, in 1938, of 1262

patients, 323 or 25% had a definite history ranging from misdemeanors to felonies, this in spite of the fact that a considerable portion of the criminally insane patients had been removed to a special hospital. It is thus shown that undoubtedly the criminal tendencies among the psychotic presents a greater problem than that found in the population at large. It leads one to wonder, since the etiological factors are apparently the same, whether the mental mechanism of the criminals and the psychotics is not similar. Many of the cases studied had proven to be definite criminal problems before overt psychotic behavior was noted or possibly in a prepsychotic state. I use the term prepsychotic state with some reservation as it is almost impossible to determine the exact date of the actual onset of a psychosis. Thus some of the crimes that were considered to have been committed in the so-called prepsychotic state may actually have been committed during the early days of the disease process. It has been stated that the psychoses removed the inhibitions which prevented the individual from carrying out underlying criminal tendencies. It would seem to me that so-called criminal tendencies are inherent in all individuals, the inhibitions being produced artificially by the society in which the individual lives. The lack of these inhibitions is the same mechanism and is the same in both groups. In one the precipitating factor is on a logical premises and in the other illogical because of the presence of delusions. This is well demonstrated in the cases of murder resulting from a paranoid reaction and the cases of murder due to actual wrong or for personal gain. Even today many paranoid individuals are living in the community, always a potential danger. At times their psychotic behavior has been noted for years and was thought to be harmless. We have in our hospital today a man who was known to be insane for years. He was considered harmless by the community until he murdered his brother-in-law. On careful psychiatric observation it was found that these delusions had been present for years but that he had never expressed them. Other cases have been tried and sentenced and it was not until



they were under the close supervision of the prison that their psychotic behavior was noted. The exact number of criminals who are psychotic is unknown as undoubtedly our prisons contain many who would be considered insane if they could be carefully examined. Possibly an ideal situation could be created if each first offender were as carefully examined mentally and physically as are the patients when they are admitted to a hospital for the insane. This might be an expensive procedure, but it would eliminate a certain amount of injustice and a certain amount of repetition of crime. I mention the physical examination because there are diseases amenable to drug therapy which may cause mental changes. Any factor which will release the inhibitions which prevent the individual from following out his personal desires which are contrary to the welfare of the group, whether these desires are at a conscious or so-called unconscious level, can be considered as a precipitating cause of the crime. Also, lack of emotional control due to physiological factors may prevent an individual from behaving in a social manner even though he is well able to recognize right from wrong. We must therefore consider epileptic equivalents, spontaneous or continuous hypoglycemic states, and various endocrine disturbances as causes of crime.

I feel that the legal profession must join with the psychiatrists in attempting to educate the public that the criminal deserves the same careful study as is given to any other sufferer. It must be realized that passing laws does not eradicate crime. The difficulty lies within the personality, is a distortion of what we now consider normal, and requires years of study and treatment before it can be removed.

### ENDOCRINE THERAPY IN MONGOLIAN IDIOCY

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The profound mental defect associated with mongolian idiocy and the accepted hopeless prognosis make such cases a social and economic problem for the family concerned. The brachycephalic skull with a flattening of

the frontal and occipital regions; the narrow, slit-like and oblique palpebral fissures; the flattened nasal bridge; the scanty or deficient scalp hair; the slightly open mouth; the enlarged and sometimes protruding tongue are features which make this condition easily and early diagnosable. The diagnosis is seldom a problem, except possibly in the early months of infancy when a likeness to cretinism may be confusing. An unusual developmental feature is the absence of the terminal phalanx of the little finger. Lack of normal voluntary muscle power is prominent and in the latter months of infancy pot belly is commonly observed.

The mongolian child is usually good natured, easily amused and shows a marked tendency to imitativeness. The ultimate mental age development in cases of mongolian idiocy varies from four to seven years, according to Henderson and Gillespie (1). The morbid anatomy is that the brain is usually smaller than normal and the convolutions simpler. The cerebellum and brain stem are usually underdeveloped, the pyramidal cells of the cortex are immature and fewer than normal, according to the above authors.

The etiology of mongolian idiocy is unknown, though many theories concerning it have been advanced. During the past few decades, a definite effort has been made to establish endocrine disorder as an etiological factor in mongolian idiocy. Cases have been treated chiefly with pituitary gland preparations, including the growth fraction, thymus and thyroid extract. I do not believe that anyone has or will seriously make the statement that a cure of mongolian idiocy is attainable with endocrine preparations. The fact must be recognized that where permanent brain pathology has occurred, such as has been found in mongolian idiocy there is little likelihood of any endocrine preparation ever reverting pathological tissue or cells of this type to normalcy. The maximal hope is that progression of the pathology may be curtailed and/or the impaired cell physiology improved. The purpose of this presentation is not primarily to report that improvement appears to be obtainable with endocrine therapy in mongolian idiocy, but more to stress the point that injurious and severe toxic effects of endocrine therapy have also resulted.

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The recent reports of Benda (2) on the histology of the pituitary and thyroid glands in cases of mongolism place endocrine therapy in a more sound position as a therapeutic agent. In mongolism he found that there was a retarded growth curve and that growth ceased at about age 15. Skull growth is retarded early. Arrested development occurs at the base of the skull and there is an associated retardation of the fibrous parts. The micro and brachycephalic skull associated with mongolism is a characteristic sign which differentiates such children from cretins, who have large vaults. He states that mongoloids show early ossification and fusion of the epiphyseal line. The thyroid histology was studied in 14 cases of mongolism; the cellular changes found were chiefly degenerative in character, resembling those found in the various forms of goiter and suggested a temporary stage of thyroid dysfunction. The prominent histological features were colloid accumulation, diffusion of colloid into the surrounding spaces, epithelial changes varying from a low type of epithelium to adenomatous growth-like processes, and increase in stroma. In 13 cases of mongolism the histology of the pituitary anterior lobe showed an increase in eosinophilic cells and a deficiency of basophilic and chief cells. Benda states that the evidence tends to indicate that in mongolism a morphokinetic abnormality is caused by the endocrine disturbance. Crookshank (3) states that cases of mongolism in later life frequently develop a myxedematous state.

The author feels that it is beyond the present sphere of experimental research to conduct any experiments on animals to produce the mongoloid state. Accordingly, the case for endocrine therapy must rest on present-day pathological findings and clinical observations of therapeutic results.

It is worth noting that no other therapy has been advocated in mongolian idiocy. Griffith and Mitchell (4) do not even mention therapy for this condition.

When endocrine therapy is instituted in cases of mongolism it must be emphasized that endocrine preparations have an effect upon the developing body as a whole, as well as on the limited pathology producing the clinical picture. We must, therefore, possess a knowledge of the total therapeutic action of

the endocrine substance administered on the tissues which are normal for the age period but are in the process of developing to full maturity. This point is important because it is our impression that in order to obtain effective and optimal results with endocrine therapy in cases of mongolism, therapy should be instituted as early as possible and certainly before age two years. When institution of therapy is delayed after this period, the end result appears to be less favorable. In older mongolian children only minimal results can be expected. Instituting endocrine therapy at an early age to obtain the most favorable results, therefore, requires that the dosage be maintained at minimal or deficiency state levels in order to avoid precocious evolution and development of immature but normal cells and tissues. Thyroid extract is a marked accelerator of cell development. Our finding in two infants treated with thyroid extract reveals that osseous development is precociously advanced by its administration. In the case of a cretin child, age 8 months, with no carpal centers, ten months of thyroid therapy produced a bone age in the wrist of 8 years. The bone age of a thyroid treated mongolian idiot at age 3½ years was also found to be that of an eight-year-old child. Severe hyperthyroidism and exophthalmus were produced in approximately six months in a mongolian female age 9 years, to whom 3 grains of thyroid extract was administered. Not until one year after stopping thyroid therapy did the toxic symptoms disappear; the exophthalmus did not disappear until two years later. We have no means of reverting the advanced osseous growth to normalcy. The point to be strongly impressed on the family is that one must be satisfied with gradual but progressive improvement in mongolian idiots treated with endocrine therapy. An attempt to force improvement by larger dosage is prejudicial to the end result and the ultimate good of the patient. These cases are sufficient to establish definitely the fact that thyroid extract, when exhibited beyond the deficiency state of the age period, is harmful and injurious; equally, permanent injury may be effected.

Case E. F.: Diagnosis-Mongolian Idiocy. White, male, age 10 years. Normal birth. Three other siblings normal. Dentition and

walking delayed. Speech delayed until  $4\frac{1}{2}$  years. Mental development markedly delayed. Present history: Chief complaints are retarded growth, retarded mental development, retarded speech development, hoarse raspy voice, infantile genitals. Physical examination: This child presents the typical features of mongolian idiocy and infantilism. Previous history: This child had received no treatment up to age 7 years, when he was first examined on June 25, 1936. The x-ray studies showed a sella turcica measuring 7 mm. in the AP, 4 mm. in depth. There is an increase in the digital markings and slight widening of the suture lines. There is calcification of the choroid plexus. X-ray of the wrist showed retardation in epiphyseal development. The child was administered anterior pituitary grains  $\frac{1}{2}$ , thyroid extract grains  $\frac{1}{10}$ , and calcium glycerophosphate grains 3, three times a day, and at the end of two years his growth, which had practically ceased, had been reactivated and there was an inch and a half of growth per year. The child showed improved muscle development and improved physical activities. The mother now states that she obtains better understanding and cooperation in her efforts to train him. His memory has improved. The voice is less hard in tone and there has been some improvement in his facial appearance. The skin which was previously very dry has improved in texture and there has been an appreciable improvement in his genital development.

The mental improvement in this case is, we believe, perceptible but neither prominent nor promising for the future. This we attribute to the duration of his condition prior to instituting endocrine therapy. The pathology has advanced beyond the point where it can be affected. The best we can hope for is improving the physiological reaction of the impaired function of the nerve cells.

Case R. L.: Diagnosis-Mongolian Idiocy. White, male, age 5 years. This child was first seen at the age of ten months. He was referred because of atypical convulsive attacks. At age ten months the child was unable to sit up and the first teeth were just erupting at age 1 year. The spells were characterized by severe twitchings which were generalized; stridor, cyanosis, unconsciousness and, in

general, the features resembled a thymic seizure. Following the attack the child was extremely weak and remained in a lethargic state for some hours.

Physical examination revealed the typical mongolian features—small penis and cryptorchid testes. The anterior fontanelle was open



Case R. L.: 2 months of age.

but showed no evidence of intracranial pressure. X-ray of the thymus was negative. The child was placed on anterior pituitary grains  $\frac{1}{4}$ , thyroid extract grains  $\frac{1}{30}$ , and calcium lactate grains 5, three times a day. During the next three months there was a gradual decrease in spells and at the end of four months the spells had ceased and have not recurred. This child has remained on pituitary, thyroid and calcium therapy for a period of five years. Maximal daily dose of anterior pituitary administered has been  $\frac{3}{4}$  grains and the maximal dose of thyroid has been  $\frac{3}{4}$  grains. During the past year he has received interrupted thyroid therapy. At the present time he is on  $\frac{1}{2}$  grain thyroid daily. His clinical course was as follows: at age  $1\frac{3}{4}$  years nine teeth were present, the anterior fontanelle was still open; his facial expres-



sion was much brighter and there was marked improvement in muscle power. The testes were in the scrotal sac. He was able to stand up with a support. His height was 31½ inches. At age 2½ years he was still unable to walk alone but his muscle strength and abdominal muscle tone continued to improve.



Case R. L.: 6 months of age.

At age 3 years he was able to walk alone. Whereas formerly he could speak only one directive word, he was now beginning to group words. At age 4½ years he was walking around, attempting to form sentences, dentition was normal, and there was continued improvement in his general appearance. On March 6, 1940, he weighed 42 pounds, was 42 inches in height, with proportionate measurements. His physical activities were of low normal character and his mental activities were as follows: He promptly carried out directions, replied intelligently to questions, and in general his mental behavior and adaptation to study and training could be considered sat-

isfactory, a low normal, in comparison with the usual retarded mental and poor physical abilities of the untreated mongoloid.

Case W. B.: Diagnosis-Mongolian Idiocy. White, female, age 4½ years. First examined February 28, 1939. Previous history: instrumental birth. Four other normal siblings. First dentition 13 months, walking delayed until 24 months. Speech markedly retarded. Child has received thyroid extract therapy, from 1¼ to 1½ grains, since shortly after birth though not consistently. Present complaints are the mongoloid features, protruding tongue, caries of the teeth, digestive disturbances, constipation, pot belly, enuresis, speaks but one or two words, voice harsh and raspy. Mental retardation: inability to walk alone.



Case R. L.: 12 months of age.

Physical examination: height 39½ inches, weight 33 pounds. The child presents the physical features and mental retardation present in mongolian idiocy. Laboratory: Wassermann negative. X-ray: the sella turcica is normal in shape, measures 7 mm. in the AP and 5 mm. in depth. Seven centers of

ossification are present in the right wrist. X-ray of the thymus is normal. Therapy: anterior pituitary extract, grains  $\frac{3}{4}$ , thyroid extract, grains  $\frac{1}{10}$ , and calcium glycerophosphate, grains 3, three times a day were administered. Thyroid extract was subsequently discontinued for two months because



Case R. L.: Age 18 months.

of diarrheal attacks which occurred on four occasions. Withdrawal of the thyroid extract resulted in the child's mental and physical activity becoming diminished. Resumption of therapy produced marked improvement. At the end of a year she had grown  $3\frac{1}{4}$  inches and gained 2 pounds. She was showing a greater interest in her instruction and in books and attempted to repeat word exercises. Her general muscle power was improved. She was able to walk about unaided and there was beginning improvement in her facial appear-

ance. The child appeared to be mentally brighter and was showing good cooperation.

Because of the precocious osseous development, it was considered advisable to maintain thyroid therapy at a low level in this case. Another factor was the underweight state of the child, which can also be attributed to previous thyroid administration.

R. A. L.: Diagnosis - Mongolian Idiocy. White, male, age 5 years. This child was diagnosed as a case of mongolian idiocy shortly after birth and numerous consultants gave a hopeless prognosis. The parents were advised to commit the child to a permanent mental institution and forget its existence. At



Case R. L.: Age  $5\frac{1}{2}$  years.

Brunel

age  $2\frac{2}{3}$  years, on the advice of the old family physician, the child was taken from the institution and administered  $1\frac{1}{2}$  grains of thyroid daily. At the end of two months he showed considerable improvement, was more alert physically and mentally. On January 10, 1938, he was referred to the author. Phy-

sical examination revealed: height 36 inches, weight 31 pounds. Lower measurements 15 inches. Scalp: short hair, moderately fine. Skull showed diminished anterior postero diameters, increased occipito-parietal angle and lack of frontal sinus development, especially the supra-orbital ridge. Nasal bridge depressed, slanting eyes. Facial color: increased reddish tone. Eyelids and eyebrows moderately developed. Tongue negative; palate medium arched vault. Teeth well developed, small squarish type. Thyroid not palpable. Chest development normal. Heart negative. Pulse 120. Abdomen: slight increase in convexity, no umbilical hernia. Extremities: marked hyperextension of the elbow joints; marked tendency to knocked knees. Skin: dry, abnormal. Hirsutism: negative. Obesity: negative. Genitals: right testis moderately undeveloped; left testis cryptorchid. X-ray showed delayed carpal growth and skull signs were those of anterior pituitary deficiency. At the end of eighteen months therapy, which consisted of  $1\frac{1}{2}$  grains of anterior pituitary and  $1\frac{1}{2}$  grains of thyroid extract daily, there was a marked general improvement. The child was more alert, developed a good memory, and was making a definite effort to speak. He responded very well to his teaching program. There was a striking change in his physical appearance and the faces and general appearance of the child did not, except for the narrowing of the palpebral fissures and slanting eyes, exhibit the usual dull and apathetic mongoloid expression. This child returned home and his present condition is unknown. Citation of this case is made to stress the importance of instituting therapy early.

Discussion: In other forms of therapy we classify results not by the fact that a substance has been administered but by the method of administration, the quantity administered and the form of therapy administered, the pathology present, the duration of the clinical condition before therapy was instituted and the comparison with untreated or otherwise treated cases. It is felt that the same evaluation of therapy should be considered when endocrine therapy is administered to mongolian idiots. In fact it can be demonstrated in this limited number of cases that the same rules of evaluation apply. It is equally demonstrable that this form of thera-

py, as other therapies, can also be injurious, a point which is the prime purpose of this report. Comparing the untreated case of mongolism, E. F., at age 7 years with R. L. at age 5 years following four years' therapy, we find that E. F. presents the complete clinical picture of mongolian idiocy and, even after two years' therapy, has improved only to a minor degree. The harsh, deep, raspy voice persists, his physical movements are awkward, his amusements are childish in character and, while there has been some improvement in mental training and his vocabulary has slightly improved, the essential features of his condition persist. The mental improvement has not been equal to his physical improvement with therapy. R. L., on the other hand, has advanced to normal in his physical development; his vocabulary has progressed from one word of directive character to the formation of sentences. He is responding very favorably to mental training. The mongoloid features are now minimal, resulting chiefly because the frontal sinus region and the nasal bridge have developed to normal. This latter therapeutic response has been observed in other endocrine deficiency treated cases in children and the same applies to the improved configuration and development of the skull to normal. The improvement in case R. A. L., whose therapy was instituted at age  $2\frac{1}{2}$  years, corresponded in degree during the period of administration to that observed in case R. L. In this child there was practically complete disappearance of the mongolian features, excepting a slight slanting of the palpebral fissures. Cases W. B. and P. G. illustrate the fact that administration of thyroid extract alone is not sufficient, but, more particularly, that it has profound toxic effects when improperly administered. In the case of W. B. precocious osseous development is observed without a commensurate advance in her general physical and mental state. While there has been improvement in this child's physical features, it was not marked until anterior pituitary and thyroid extract therapy was instituted. Subsequently withdrawal of thyroid extract, as we have noted, resulted in reappearance of mental sluggishness and diminished physical energy. In view of the early advanced osseous development, it was felt necessary to maintain thyroid therapy below



the usual level for such cases. Case P. G. illustrates perfectly the toxic effect of injudicious thyroid administration in cases of mongolian idiocy and the fact that improvement and good results cannot be forced by attempting to administer thyroid extract beyond the real age of the child or above its actual degree of thyroid deficiency. The administration of thyroid extract in this case from 1½ to 3 grains daily over a short period of time, less than six months, resulted in a severe hyperthyroidism and an advanced major degree of exophthalmus. The toxicity symptoms took more than a year to subside and nearly two years were required before the exophthalmus had subsided to normal. The effect of this type of therapy on mental development is well exemplified by the psychological report at age 11 years, 7 months which states that the mental age of P. G. on the Stanford-Binet scale is 3 years, 7 months, yielding an I. Q. of 31 and a basal mental age of 2 years, 6 months.

#### Conclusions:

1) It is our opinion that we have observed from partial to satisfactory improvement in a limited number of cases treated with endocrine therapy, using the untreated mongolian idiot as a control. The most favorable results with endocrine therapy in mongolian idiocy are obtained when therapy is started at or before two years of age.

2) Anterior pituitary therapy appears to be required to advance the delayed osseous development of the skull and face which is chiefly responsible for the mongolian features.

3) Thyroid extract is also required in the treatment of mongolian idiocy, but it should not be administered above the estimated thyroid deficiency state because we have evidence to show that when it is administered above this dosage, it produces precocious osseous development and, more particularly, severe thyrotoxicosis. The former is irreversible and the effects of the latter have taken as long as two years to disappear. Endocrine therapy in mongolian idiocy must be maintained within the normal physiological limits of the actual age period and with such a regime improvement is gradual and not spectacular. The effort to obtain rapid and spectacular results leads to the production of toxic states and

unfavorably affects the end result of endocrine therapy.

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### A NEED FOR MORE PHYSICAL STUDY OF MENTAL CASES

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Psychiatry has made such rapid advances in the last two decades that at times it would seem that the effect of physical aspect of the human being has been almost entirely subjugated. For years before the psychiatrists became an important figure in the world of specialists the general practitioner realized that all physically ill patients were also mental cases to a more or less degree. He realized that the mind and body could not be separated. However, for a while there seemed to be some danger of taking a dualistic attitude in regard to the individual, which is really a step backward in the march of progress in medicine. Fortunately, in the United States particularly, the importance of studying the body as a whole has been realized. Psychiatrists have been so habituated to see all forms of physical ailments simulated by mental disease that they are prone to overlook the minor ailments which may be the direct etiological factor of fairly severe mental reactions. They must learn some of the attitudes of the family physician, who daily practiced psychotherapy, although he did not term it as such. Sight must not be lost of the fact that rapid strides have been made in other fields of medicine in the last few years, particularly in the chemical aspects of the body composition and the subtle changes that occur in disease processes. Often these slight changes can be found before the obvious physical changes are present which make a complete diagnosis possible. As long as we are unaware as to how the

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mind functions from a mechanical viewpoint, the two terms, which are used in psychiatry, namely, functional and organic, are merely terms of convenience, for by the term functional we are merely stating that we do not know what change has occurred. The mere fact that there are so many schools of thought shows that there are many unknown factors present and that we must deal, to a great extent, with speculation. Also the fact that we have at our command therapeutic agents which are effective, but yet for which we can offer no explanation, shows that much more research is necessary. We might compare some of our methods of treatment with the remedies which ancient civilization used with success, although they had no definite knowledge of the body structure and did not attempt to explain the "why" of treatment. It is conceivable that in the future the working of the mind will be as understandable as that of the body, that in fact, it will be part of the body, and the processes of thought will be visualized as clearly as the beating of a heart. The principles of mental hygiene must be taught and the public must be made aware of situations which cause maladjustment. The general practitioner must realize that many of his cases may be on what we now term a "nervous basis," but he should never lose sight of the fact that there may come a time when physical changes may be found which will account for the symptoms of the neurotics and all psychotics.

All mental hospitals that are worthy of the name of hospitals consider a detailed physical examination of primary importance. With the advance of our knowledge of blood chemistry and endocrinology these examinations are assuming a wider chemical scope.

A patient may be committed to the hospital because of sudden spells of temper alternating with apathy. Paranoid ideas may be present or there may be suicidal thoughts or actual suicidal attempts. He may be careless of his personal appearance and there may be a definite retardation of thought processes. Physical examination reveals nothing outstanding and the diagnosis, which would be most obviously considered, would be manic depressive psychosis, depressed

type or at best psycho-neuroses, recative depression. One diagnosis offers hope of recovery but the possibility of repeated attacks, the other, prolonged treatment or more or less maladjustment throughout life.

Let us, however, study the patient more carefully from a physical viewpoint. There may be noted a relative lymphocytosis of a slight degree. This in itself is not alarming but yet shows in some way that the body is not functioning absolutely normally. It may be the result of poor living habits due to the mental condition. But in medicine we have no right to take anything for granted. We must follow every clue until the problems which are now present are solved. Chemical examinations may show a hypoglycemia, a hypercholesterinemia, a disturbance of protein metabolism, or a disturbance of salt balance. Just what causes these difficulties, in most cases, is not known, but we do know that any of these factors may cause mental symptoms. In treatment it is found that the psychic symptoms disappear as the pathological changes are brought to normal. For simple illustration can be mentioned the severe mental abnormalities, even violent attacks, which occur in hypoglycemic states. This discovery has been made in recent times and there is still much research to be done before the mechanism is clear. One could theorize that in hypoglycemic states there is an increase in the amount of adrenalin secreted as the body attempts to return to a physiological norm by releasing the reserve sugar supply. We do not know the exact results of the rather rapid and complex chemical changes on the central nervous system.

It is true that the type of mental symptoms which are produced are dependent upon the basic personality of the individual. One would conceive that the ability to react and the intensity to react both emotionally and intellectually is physiological while the manner in which the emotions and intellect is expressed is functional.

It would seem, therefore, that in mental diseases we often have two etiological factors to consider. A knowledge of environment, racial traits, and early training will

do much to interpret the symptoms. Correction of defects in these fields will help the individual to withstand the other etiological bases or to modify symptoms when they occur.

The tendency to consider many physical diseases as due to emotional causes, a trend which we find in certain psychoanalytical schools, must be carefully guarded against. Illness occurs in all living protoplasm, even in forms in which there is practically no emotional development.

Another physical factor which must be considered in diagnosing mental diseases is the quantity of toxins and drugs to which the civilized public is now exposed. Sedatives and stimulants are used by a large percentage of the population. The majority of people tolerate these without difficulty but another group rapidly develops mental symptoms, even as individuals react differently to alcohol.

Of 483 admissions during the last two years 155 were diagnosed as psychosis due to some definite physical defect, 64 were due to toxic conditions including alcohol and 8 were due to metabolic disorders. From these figures it can be seen that nearly 50% of the admissions were suffering from psychoses, the etiological factors of which were physical causes. It is conceivable that this number would be greatly increased if we had a broader knowledge of the effect of body changes on the nervous system.

Among these patients only the most obvious physical defects were considered as possible etiological causes. Minor defects, though corrected, were not classified as etiological factors.

The old asylums are now considered hospitals and are equipped as such. Many are better equipped since they must carry on highly specialized treatment. The public has not entirely accepted the fact that the insane are ill people and even when they do consider such a fact they consider the ailment as being vastly different from physical disease. As the etiological factor of insanity loses its vagueness, a clearer concept can be gained by the community and the fight

against the disease will become more successful.

After the years of mysticism the organic approach was the first to be made in the study of mental diseases. Early in the nineteenth century definite discoveries were made as to the function of the brain. However, these discoveries seemed to be of a purely neurological nature and not of a psychiatric one. Madness was still madness, with mystical explanation and no cure. Kraepelin first classified them, humanitarian treatment was instituted, but no specific cures were discovered. Early in the twentieth century a cure for general paresis was found, previously a disease which manifested symptoms of the most bizarre type. This was almost a hundred years after the true function of the brain was being studied. It is conceivable that within a hundred more years we will discover specific cures for other forms of insanity, which now seem hopeless.

#### ADRENAL NEUROCYTOMA

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This is a type of glioma found in the brain especially about the basal ganglia, the adrenals, with metastases in the liver, in the cerebellum, the retina, the abdominal sympathetic, and spinal cord. When these tumors occur in the brain the extensive visceral metastases of retinal and adrenal tumors has not been found.

The cells in this type of tumor are small and cuboidal or larger and cylindrical. Various degrees of differentiation exist in different tumors and tend both toward the neuroglia cell and towards the neuroblast. Generally these tumors are an admixture of cells with fibrils and in some of those in the adrenals the fibrils may exceed in bulk the tumor cells. The cells are frequently arranged around central spaces forming rosettes or they may surround blood vessels. It was in 1910 that J. H. Wright pointed out the resemblance of adrenal, hepatic and many other round-cell sarcomas of infants as being of neurogenic origin and first named them "neurocytomas". In recent

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years the retroperitoneal neurocytomas of infants and similar tumors in many other regions have been frequently recognized.

Three main clinical types are recognized. The disease may begin spontaneously or after trauma, with ecchymosis of one or both eyelids, followed by exophthalmos, a tumor of the orbit and temporal region with extensions to adjacent nodes. An abdominal growth may be discovered only at autopsy. The adrenal growth may be as large as a walnut or a child's head but shows little tendency toward local extension. The structure of them is usually described as round celled sarcoma. Hutchinson described a series of tumors of the above type in children 3 months to 9 years of age and so these are known as Hutchinson Type. The second type described by Pepper and known as Pepper's Type are the congenital sarcoma of the adrenal and liver in infants. In this the prominence of hepatic metastases is the peculiarity of the clinical picture. The symptoms are those of a rapidly growing abdominal tumor caused by the diffuse growths in the adrenal and liver. Both adrenals may be involved. Other adjacent organs may or may not be affected. Structurally these are described as lymphosarcoma. Frew however regards them as medullary carcinoma because of the medullary origin as indicated by the persistence of a portion of adrenal cortex along one segment of the tumor. Secondary growths from this type appear in different territories depending upon which adrenal is primarily involved. The third type are described as medullary tumors with adrenalin content and nephritic symptoms. In one such case, a 47-year-old adult, there was an active nephritis with glycosuria, cardiac hypertrophy and hypertension. There was a neurocytoma of the right adrenal. Structurally the tumor was identical with many of the round-cell sarcomas occurring in children.

#### **Illustrative Case:—**

This patient was admitted to the D. S. H. November 10, 1913, at the age of 42, and died January 16, 1940, at the age of 69 years. Psychiatric diagnosis was Manic Depressive

Psychosis, Mixed Type. Some time before admission the patient was in an accident and lost the right foot and half of the left leg below the knee. Had been a patient in the Delaware Hospital in Wilmington, Delaware, following the accident and during convalescence there had developed his mental illness. In the notes of the admission period he was described as being stupid, irritable, contrary, and fault finding; would speak only Yiddish. Up to 1934 notes describe the patient as being very disagreeable and belligerent. From 1934 on he was quiet most of the time with outbursts of abusiveness and belligerency only occasionally. In 1937 it was first noticed that he had developed a hypertension. It was stated that so long as he was left alone he got along fairly well. In September, 1938, he developed bleeding hemorrhoids. November, 1939, he showed evidence of a beginning anemia with a hemoglobin of 66%. Was put on liver extract and iron but by the end of the month R. B. C. was down to 2,490,000 and hemoglobin 42% despite the therapy. Blood Pressure at this time was 140/70. Blood was typed and a suitable donor found. December 1st was given 300cc of blood by transfusion but no appreciable change was noticed in either hemoglobin or R. B. C. December 5, 1939, four days after the transfusion, hemoglobin was 43.5% and R. B. C. 2,430,000. Liver extract therapy and cupriferrin were continued daily. The middle of December, 1939, the patient started vomiting occasionally and it was projectile in type. Repeated physical examination at this time seemed to show a moderate tenderness over the gall bladder area. He was so uncommunicative due to his mental trouble that no help from the patient could be secured. January 14, 1940, the patient developed a state of generalized twitchings followed by complete vasomotor collapse with some pulmonary edema. Was pulseless for a few minutes. Pupils were pin point and nearly fixed to light. Was in a critical state for several hours. Was bathed in a cold perspiration. Temperature was 99, blood pressure 110/90. He received 20 cc of 50% glucose intravenously and caffeine intramuscularly. He rallied under this treatment

and by the evening of this day, blood pressure was 150/80. January 15, 1940, patient was given another blood transfusion of 400 cc. Hemoglobin of 33% rose to 39% and R. B. C. of 2,010,000 rose to 2,520,000 following the transfusion. January 16, the patient expired suddenly at 7:20 p. m.

**Autopsy** performed January 17, 1940 at 10:15 a. m.

By Dr. Frederick A. Hemsath, Visiting Pathologist of Delaware State Hospital.

Body is that of a moderately developed and nourished white man appearing about sixty years of age.

There are old amputations of the left lower leg and right foot. Abdomen is protuberant and soft. Pupils are equally dilated.

Ventral section shows well developed panniculus of yellow color. Serous cavities are free from excess fluid.

Heart weighs 475 grams. The chambers and valves are normal. Myocardium is somewhat soft throughout. Portions of the anterior surface of the left ventricle are congested. Coronaries are normal. Aorta shows moderate sclerosis.

**Lungs:** The left weighs 450. Right weighs 700 grams.

The pleural cavities show fibrous adhesions of the left upper lobe and entire right lung. The right lower lobe shows congestion and an area of central consolidation, about 6 cm. in diameter. Right upper lobe shows moderate congestion. Left lung shows three metastatic nodules measuring one cm. in diameter, in various portions of the lower lobe. The middle and upper lobes show moderate congestion. There is no mediastinal lymph adenopathy.

The abdomen is free from adhesions.

**Liver** weighs 1900 grams, shows firm structure, smooth capsule and dark red color.

**Gall bladder** is normal.

**Left kidney** weighs 175 grams. It shows quite a pale structure but is otherwise normal. **Right kidney** weighs 775 grams. It is densely adherent to the perirenal fat and enlarged in proportion to the weight. Section shows a large tumor of the upper pole which springs from the outer border and is intimately fused with the kidney substance.

Tumor shows pale yellow to gray structure with an area of degeneration with resultant cystic structure in one area. There is no associated hemorrhage.

**Spleen** weighs 425 grams. Capsule is smooth and the organ somewhat soft. Section shows moderate bulging of the cut surface with prominent splenic nodules. Pulp is easily scraped away.

**Left adrenal** is normal. **Right adrenal** not identified.

**Renal pelves, ureters and urinary bladder** is normal.

**Prostate** is normal.

**Skull:** Brain weighs 1400 grams. The structure is entirely normal aside from moderate edema.

#### **Diagnosis:**

Malignant tumor of the right adrenal. Metastases to lungs.

Pulmonary congestion with congestive pneumonia, right lower lobe.

Splenic hypertrophy. Cardiac hypertrophy.

Acute myocardial degeneration.

Bilateral fibrous pleurisy.

#### **Microscopic Notes**

Retroperitoneal tumor is composed of strands of cells with pale cytoplasm and a suggestion of nerve processes and with nuclei varying considerably in size and structure. Rosette formation is present. Considerable areas of necrosis are seen in the primary tumor.

**Lung:** Metastases shows hyperplasia of the cortical tissue.

**Suprarenal:** Shows primary tumor but without necrosis. Other portions show edema with slight alveolar polynuclear infiltration.

**Kidneys:** The kidneys show considerable cortical scarring, thickened glomerular capsules and fairly numerous hyalinized glomeruli.

**Myocardium:** Normal.

**Liver:** Normal.

**Spleen:** The spleen shows red cell congestion of the pulp.

**Pancreas:** The pancreas shows well developed Islands.

**Histological diagnosis:**

Right adrenal **neurocytoma** with pulmonary metastases.

Pulmonary edema.

Early congestive pneumonia.

Chronic glomerular nephritis.

The case speaks for itself and no special conclusion is to be drawn except that these adrenal tumors are difficult of diagnosis, a fact demonstrated herein. There was no doubt in anyone's mind that this patient had some form of abdominal malignancy but that was about the limit of knowledge without the aid of an exploratory operation.

## PSYCHOSIS FOLLOWING SECONDARY ANEMIA

### Report of Two Cases

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The division of the psychoses into functional and organic indicates that either psychogenic factors or organic changes may be the primary causative elements in the production of a psychosis.

Prognostically, the organic psychoses are rather unfavorable as compared with the so-called functional types, because the disease process is considered irreversible when definite organic changes have taken place. In between these two possibilities we may place those cases in which marked alteration of the physical strength and psychogenic factors are held responsible for the causation of a mental and emotional breakdown, even though it may be somewhat difficult to make an accurate estimate of the respective factors. As may be expected, with marked improvement of the physical condition, the psychosis cleared up, not forgetting, however, that at the same time, psychiatric help also had been given. It is important to keep both of these main causative factors in mind when we deal with a psychosis occurring at the ages as reported in the following case histories, because the occurrence of a psychosis at these respective ages is not uncommon and attention to the physical condition with appropriate physical measures taken at an early date, if successful, would

likely prevent its development. Appropriate consideration of the physical factors also helps one to gain a better understanding of the basic personality and will provide a favorable prognosis if the underlying physical factors can be removed.

**M. B.** A woman, thirty years of age, married, housewife. Family history essentially negative. Birth was normal and early development rather slow. She suffered from enuresis until about the age of five years. She disliked school in the higher grades and was truant quite often. She quit school at the age of sixteen when in the 8th grade. Medical history negative except for an occasional slight cold. Menses were established at the age of thirteen and have been normal. She was considered friendly, sociable, quick tempered but never aggressive, kind hearted and generous, clean and neat in her personal appearance and home. She was married at the age of seventeen and married life is said to have been congenial. There were six children born, the youngest by Caesarean section. The first five deliveries and pregnancies were normal. During the last pregnancy she had an intermittent bleeding one month prior to the Caesarean section due to placenta previa.

**Onset of Psychosis**—About two months prior to the birth of the last child, January 9, 1940, a friend of the patient had had a difficult labor resulting in the death of her child. This had worried patient somewhat but otherwise she seemed to be well. When Caesarean section had to be performed on patient she was given very short notice and apparently was emotionally unprepared. There was a somewhat stormy convalescence due to post-operative distension. Soon after that she became convinced that death was approaching, heard voices in the room talking about her and could not be convinced that she was in a hospital. She also thought there were fish in her stomach and that she was going to get gas. She displayed a marked impairment of memory and spoke of suicide. Post-operative progress was satisfactory but the mental disturbance continued, necessitating her transfer to D. S. H. where she was admitted, January 18, 1940. Physical examination on admission revealed asthenic build, dry skin, poor teeth. Blood pressure 116/62. Laboratory examination showed an occasional slight trace of al-

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bumin with occasional clumps of pus cells in the urine. Red blood cells—2,210,000. White cells—7,500. 69% polys. Hemoglobin 50%. Blood sugar 91. Blood urea 11. Blood Wassermann, Kolmer and Kahn, negative. Spinal fluid serology negative. Mental examination revealed auditory hallucinations, depressed mood, somatic delusions and hopelessness concerning the future. The psychotic state lasted for about a week following her admission. From then on, she was pleasant, smiling readily, talking in a relevant, coherent and connected fashion, well oriented with good insight. She took active part in the occupational and recreational activities, ate and slept well and gained considerable weight. Psychometric test given about nine weeks after the psychosis had disappeared indicated an entirely normal integration with her potentialities at dull normal level. The blood picture showed a gradual increase until on May 6, 1940—Red blood cells, 4,230,000, and hemoglobin 83 $\frac{3}{4}$ %. Patient was paroled, April 18, 1940.

L. W. A white woman, age 69, married, a housewife. Family history negative. Birth and early development were normal. She received a 6th grade country school education. She was said to be mild mannered, a good housewife, hard working and thrifty. She had typhoid fever at the age of twenty-five and was in a delirium for two weeks. She has had mild attacks of grippe and has been suffering from colitis intermittently during the past twenty-five years. Of five children born, two died in infancy. Married life has been happy and congenial.

*Onset of Psychosis*—Late in July, 1939, patient had one of her attacks of colitis but in a more severe form. About a couple of weeks later, the first symptoms of mental trouble appeared when patient was observed taking off imaginary stockings even to removing garters. Patient seemed listless and suffered from extreme weakness. The attending physician had her admitted to a general hospital. While there she became confused, at times failing to recognize her own relatives, would mumble to herself, pick at the bed clothes and was often trying to thread an imaginary

needle. She was restless, necessitating special measures to prevent her from falling out of bed. Also, she had been under almost constant sedation. Laboratory examination showed a severe anemia with red blood cells of 3,320,000 and hemoglobin 38%. The red blood cells showed microcytosis. She was given a transfusion of 500 cc of full blood. The blood picture improved but the mental condition became worse and she was admitted to D. S. H., August 24, 1939. Physical examination revealed the heart somewhat enlarged with a systolic murmur about the bases transmitted to the apex. Blood pressure 144/80. Neurological examination was negative. Laboratory examination showed negative blood serology. Blood urea nitrogen 11. Blood sugar 93. Blood count on admission 4,070,000 red cells and hemoglobin 72%. About a week following admission, patient was changed from a colitis diet to a regular diet which she took with no discomfort or ill effects. She was not given any anti-anemic therapy. The initial blood count dropped somewhat but hemoglobin was held at 66% and the red count was somewhat below four million on repeated tests. Obviously, the regular diet was sufficient to maintain the blood picture at an even level. Mental picture was that of a confusion which cleared up after a few days. There was some impairment of memory which gradually improved in a course of two weeks. Patient was paroled, October 7, 1939. Repeated parole interviews at regular intervals show that patient has continued to be well, in fact, she states that she has been better than for a long time previously.

*Conclusion*—The case histories of two patients are presented in whom there developed a psychosis of comparatively brief duration following secondary anemia. In the first case the anemia was due to marked loss of blood and in the second due to dietary deficiency associated with some loss of blood, the exact amount of which could not be determined from history. Both patients recovered a short time after the underlying physical deficiencies had been corrected. Attention is called to the importance of the physical factors in the development of a psychosis, regardless of the age at which it occurs.

## THE GENERAL PRACTITIONER AND PSYCHIATRY

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With the great problem of mental illness growing no less in importance from day to day, it behooves other of the medically interested individuals than the psychiatrist to pay increasing attention to the difficulties involved and take active part in plans for their amelioration, if not indeed to share the responsibility of preventive measures. In this day of modern medicine with all its achievements it is decidedly unwise for any doctor to draw himself aloof from the task which faces the well trained army of those whose main purpose is the combating of disease and promotion of health.

Modern psychiatry is an infant, so to speak, among the medical sciences. But the great strides of progress taken during the past decade or two only serve to presage far greater accomplishments in the future. Compared with some other fields of medicine, true cures result in a small percentage of attempted relief measures. But when due credit is given, and the truth is determined, it is found that a far greater number are returned to normal activities, gainful occupations, or are enabled to spend long periods in relief from their mental difficulties than is generally understood. But to increase the possibility of such favorable results in the treatment of the neurotic, the mentally afflicted, or the true psychotic, one point of greater importance seems to stand out above the rest, the matter of early recognition of beginning mental change or incipient psychoses. Generally speaking, and it will probably always be so, the general practitioner is the first to see these individuals because they approach the doctor for relief from imagined ills, misinterpretations of feelings or sensations, or true organic disease which has produced some sort of fouling of mental processes.

The old question immediately arises, what is normal? By whom or by what standard must we judge an individual to be abnormal mentally? There are conditions which seem right in some locations which are considered decidedly askew in others. Different time periods and fluctuations of viewpoint have pro-

duced many differences of opinion. All about us are those with whom we would not choose to live because of their peculiar behavior, as judged by our narrow standard of normal, perhaps. And there are others, no doubt, who would resent being forced to imitate our daily manner of living. And so we are forced to agree with the conclusion of others that even though one may be considered to be abnormal he cannot be classed as psychotic or insane until his speech, actions, or both produce friction or evident antagonisms in his social relationships or interfere with the usual smooth operations of society by generating a question of his own safety and that of others. Because of the variable factors of life and contact, as well as the many differences of opinion, it remains a serious task indeed to endeavor to determine the mental condition of the psychically ill and thereby fix their future status in society.

It has been said, and rightly, that insanity is more a matter of quantity than of quality. The mental mechanisms of the so-called abnormal individual are not different from the normal reactions in kind, but most certainly in degree. One might say as did a writer recently, they are like us, only more so. In other words, were the behavior of most any normal individual as evoked by certain unpleasant stimuli continued indefinitely it would be sufficient to cause that person to be classified as abnormal, if not insane. Such brief abnormalities occur each day in the lives of the business man who becomes irate over a stenographic mistake, the parent during the height of disciplining a child, or of the youngster who is building dream castles as the imagination is allowed free rein, to mention only suggestive instances from the multitude of daily experiences, any one of which if segregated and elaborated upon could be considered abnormal.

The moods and mannerisms of humankind are extremely protean and to recognize the occurrence of abnormalities requires understanding produced by as close relationship to the situation as possible. The general practitioner who is acquainted with the environment of his patients has an entering wedge in such knowledge which might aid greatly in the study of the mentally sick individual. While modernization has invaded the realm

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of the family doctor, and has made possible the visits of the nearby sick to distant physicians, there is yet a welcome intimacy with the village or country life which can be well used as a first step in solving many early problems of the neuropsychiatric or incipient psychotic patient.

It can be said without fear of much contradiction that 85% of ills carried by the patient to the doctor have some basis in malfunctioning mentation. Certainly this is evident to every general practitioner when he considers the variety of visitors who come with complaints no basis for which can be found in the organic structure or abnormal physiology. Never should the oft-repeated statement be made, "run along, you're just a bundle of nerves; forget it," or words to that effect. This sentiment is frequently injected into an already distraught life and mainly serves the opposite purpose from that which the doctor intended. The patient may be one who is certain she has organic lesions—a cancer, brain tumor, heart disease, pulmonary tuberculosis, or what not. A simple examination with the finding of normal conditions in many cases is insufficient to satisfy the expectations of the individuals. This is a starting point for any general practitioner or specialist which leads into a field of psychoneurosis, or even early psychosis. It may be the first indication that the patient is slipping mentally. Of course, it is customary to speak of these lesser conditions as being nervous ailments. But the doctor must keep in mind that the true condition requires mental adjustment, in whatever way that may be achieved. This type is frequently given to believe they have suffered a "nervous breakdown," when the seriousness of the affair is evidenced in exhaustion, sometimes depression, loss of interests and concentration inability.

It is easy to pass off a condition as being "functional." Whenever that term is used it sort of implies that there is no use looking for a cause, it just had to be in the nature of the case. Centuries ago a very wise man said, "the curse causeless shall not come." Certainly the time must arrive when we will not have to rely on this one word to cover the etiology of such a large number of conditions. We should begin now by making greater ef-

forts to determine etiology which can be stated in much more definite terminology. Many conditions for years thought to be "functional" are now known to have very definite etiology. The greatest trouble with this diagnosis is that it gives a false security to an ailment which may carry serious consequences.

Another condition in which the general practitioner must play a part is alcoholism. With the return of large-scale production of alcoholic beverages there is certain to result acute and chronic manifestations in increasing numbers from the use of this substance. Alcohol may not be the cause of the individual's difficulties, but merely an avenue which appears to lead out of a disturbing dilemma—a temporary escape from a real problem. Some careful investigations have produced considerable proof that alcoholism is a mental disease, mainly because of the cause for drinking and not the effects of the alcohol. The general practitioner is uniquely situated, because of closer contacts, to be able to more surely determine and therefore remedy, if possible, the etiology in the case.

Again, the family doctor is frequently called upon to cope with a problem which is being recognized too frequently among the young, involving changes of character, manner of life and asocial trends. This leads to that vast throng in our hospitals and out who are classified as dementia praecox or schizophrenia. A young man may show marked changes in emotional reactions, commonly called blunting. There is indifference or apathy, loss of interest in friends, relatives, loved ones. The individual may show indifference to matters formerly of greatest concern to him. One sees a flight from reality, with difficulty in distinguishing fact from fancy, losing contact with real things and perhaps living idealistically in a dream world of his own. There may be apparent lack of harmony between emotional and intellectual reactions—fear, anger, rage and love provoke no accompaniment of emotion, or the opposite type of reaction from that expected. Seclusive tendencies, desire to be alone, loss of pride in appearance and behavior, development of self-centered ideation, with everything directed toward him are also elements frequently seen in this type of case. Hallucinations, especially of auditory type are frequently known



to be present. Delusions do not so often occur. The recognition of some or all of these earmarks in a case should immediately call for psychiatric consultation. This is the kind of case in which early recognition and institution of treatment may accomplish the most good; whereas, delay will likely mean a chronicity with a ruptured social status.

And then there is that problem of old age. No doubt hospitalization for this group will continue in numbers, if not increase for some time in the future. Many factors play a part: economic situation, lessened desire and ability to care for parents, weakened family ties, etc. The family physician can no doubt aid in many cases in preventing mental changes which are brought about by untoward situations, wherever he has power and station to assist. Of course, altered organic factors cannot be remedied in most cases.

Summing up these few remarks which are in no way intended to be a treatise on therapy, and certainly not discounting the ability of the general practitioner, it is in place to say that he has an understanding of the social relationships of those coming under his care. He has opportunities in guidance and the moulding of characters which in a peculiar sense fit him for active preventive work against the great tide of human losses occasioned by mental breakdowns. Clinical advantages in connection with the mental hygiene movement, consultation possibilities with trained psychiatrists and the realization that the State Hospital Staff is a cooperative force working tirelessly for the relief of conditions occasioned by mental abnormalities should assist in cementing a friendly relationship between the general practitioner and the practice of psychiatry in all its phases for the common good.

The early recognition and hence the proper treatment given to the psychoneurotic, the early psychotic, the various depressions, the alcoholic, the aged and the various subgroups can be a very beneficial procedure on the part of the general practitioner. And he can do much to hasten the day when the lay mind will rightly relate itself to the attempted treatment in the specialized hospitals for treating nervous and mental diseases. This whole process of rehabilitation and re-education will also receive impetus when the State

Hospital is no longer considered a welfare institution, but instead is recognized for its true worth as an organization with purpose and accomplishment in the correlation of all benefits for the nervously and mentally ill, and functioning in close formation with the general practitioners in the corresponding area.

## FUNCTIONAL PSYCHOSIS AND BRAIN TUMOR

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### Introduction:

The study of mental symptoms in brain tumors has attracted widespread attention in recent years. The problems involved are of such a complex nature that it seems difficult to arrive at a clear orientation in this particular field where neurology and psychiatry meet. One may be allowed to generally state that mental symptoms are frequently found in tumors of the frontal lobe, temporal lobe, of the corpus callosum, of the base of the brain. However the topical location in other areas of the brain than those mentioned before does not exclude the possibility of mental symptoms associated with brain tumor. The opinion about the role of mental symptoms in brain tumor seems to be divided in different lines of thought. Ruffin (1) in a recent review of the problem of mental symptoms in brain tumors, has collected a variety of examples representing the views of the foremost students of the problem. There is a distinct tendency to ascribe to certain areas of the brain distinct psychic manifestations and to their pathological involvement the production of likewise distinct mental symptoms.

Leonard B. Cox (2) has described excited or maniacal states in connection with tumors of the base. B. J. Alpers (3) found a special type of mental symptoms in callosal tumors. Characteristic mental changes are commonly ascribed to the frontal lobe, yet the fact that frontal lobe tumors have been found which were not associated with mental symptoms, is apt to arouse one's doubt in the acceptability of the use of mental symptoms in favor of a topical differentiation. On the

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other hand, the study of mental signs is advocated as a valuable help in more accurate localization and differentiation in a recent article by Barre. (4)

From the study of the literature one gains the impression that mental symptoms associated with brain tumor are essentially of four different types.

(a) Mental symptoms which fall into the order of general symptoms of brain tumor.

(b) Mental symptoms of a more specific nature which may be more or less directly ascribed to the focal lesion.

(c) Personality reactions.

(d) Coincidence of tumor and psychosis.

The factors underlying the development of mental symptoms in brain tumors are complex and multiple and certainly difficult to determine and to isolate in each single case. Seven such factors are elaborated by Pessin (5) and are quoted here:

(1) The tumor itself, indicated by the disappearance of mental symptoms after removal.

(2) Its size, not considered to be a reliable index.

(3) Its location.

(4) A disturbance in cerebral hydrodynamics.

(5) Alteration of the blood supply to and pressure effects on the brain tissue.

(6) Toxic effects from tumor tissue or disintegrating brain cells.

(7) Dynamic elements contributing to the individual's personality development.

Many authors are loath to clearly differentiate between focal mental symptoms and general symptoms pertaining to the mental sphere. Of special interest from a psychiatric view are those mental changes in brain tumors which may be described as reactions of the total personality and which belong to the sphere of the functional psychoses. Baruk (6) in his text book mentions forms of maniacal, paranoid and schizoid reactions found in brain tumor cases.

It seems to be plausible that mental changes of whatever type may be useful in advancing diagnostic efforts particularly whenever associated with other organic neurological signs. In the absence of distinct neurological

symptoms, the mental reactions may be apt to obscure the few possibilities of promoting the diagnosis by physical tests.

Recently M. Madison Campbell and K. E. Hynes (7) have stressed the difficulty of accurate evaluation of mental symptoms in the absence of tangible organic signs. The following case study is being used to illustrate the difficulties in furthering a correct diagnosis and to demonstrate the peculiar situation of the physician who is confronted with the task of evaluating both mental and organic symptoms.

#### Case Study:

The patient, a 31-year-old white man, did not present anything unusual in his past history except for common childhood diseases and an appendectomy. In 1932 he had a slight mental upset. At that time he had grandiose ideas, thought he was a millionaire, opened an office, hired a stenographer, bought a new car and opened several charge accounts. In May, 1939, he accidentally fell out of his car, injuring his spine. This occurrence apparently was inconsequential and was followed by complete recovery. About the first of January, 1940, patient began to complain of severe pains throughout his head. He described them as very sharp, running through his head for a few minutes and recurring at regular intervals. He also began to have dizzy spells and "his legs did not seem to want to work." His speech became a little thick. He became irritable, and unless he had his own way, would become very angry. On February 17, 1940, he was taken to the hospital. The same night he signed his own release and left. According to the information obtained patient had been complaining of dizziness for seven weeks. His dizziness became more noticeable on moving his head from side to side. Finally he was dizzy most of the time. Headaches were complained of for a period of five weeks. The headaches started in the frontal region and were intermittent at first, however increased in frequency and finally became almost constant. There were also frequent paroxysmal pains running up from the back of the neck to the vertex. Patient had vomiting attacks for one week. The vomiting occurred from

half an hour to one hour after meals, was apparently not preceded by nausea and seemed to be forceful. There had been some visual difficulty for ten days prior to the previous hospitalization. The visual difficulty was combined with photophobia. Patient's gait was difficult for about one week, and he was in need of assistance in walking on account of weakness and poor co-ordination of the legs. For a few days the patient had "talked irrationally and done peculiar things."

The essential physical findings at the time were as follows: Blurring of disk margins without any grossly determinable field defects. Definitely impaired vision. Pupils regular. Tongue slightly deviating to the left. No tremor or atrophy of the tongue. Muscle strength normal. Positive Romberg. Dyssynergia of the lower extremities in the heel-to-knee test. Patient walks on a wide base and staggers irregularly. The tendon reflexes were generally active, but no abdominal reflexes were found. Upon consultation the same obvious signs were determined. In addition, general facetiousness and irritability were noticeable.

As diagnostic possibilities were considered abscess, gumma or other mass lesion in the frontal area, in the midline of the cerebellum or in the area of the 4th ventricle, blocking the outlet of the cerebro-spinal fluid. Neurosurgical examination was requested and obtained. While under clinical observation, patient was most unco-operative: "He made a good deal of noise and confusion." The neurosurgeon summarized his opinion as follows, "I think he is a mental case though he might conceivably have a large frontal lobe tumor. This might account for his optic atrophy and mental dilapidation. The x-Ray, however, fails to give any definite indication of the presence of a tumor in this portion." The suggested encephalogram was refused.

When his wife came to take patient home, he kept insisting on buying his brother a quart of liquor, though knowing that his brother did not use liquor. His conversation seemed to be somewhat rambling, and he apparently suffered greatly from pain. His wife finally demanded his examination, par-

ticularly because he seemed continually to want to wander about the streets and because he could not walk well without assistance. He also would say that he was starving but when given food he would not eat it. Sleep apparently had been poor for two weeks before his transfer to the Delaware State Hospital. On admission no distinct neurological symptoms were found excepting somewhat sluggishly reacting pupils, a tendency to fall to the left side in Romberg position and impaired vision. A few days later the pupils were found to react about normally to light and convergence. There was tenderness of the supra-orbital and infra-orbital arches to pressure. The tendon reflexes were equally active on the upper and lower extremities. The Mayer phenomenon was feeble on the left hand, absent on the right hand. The abdominal reflexes could not be elicited, and the plantar reflexes were obscured by flight reactions. Pointing trials were normally carried out with the hands. Cooperation was perfect for a series of tests but patient did not want to leave the bed or to give up his supine position on account of severe headaches which were mainly located in the frontal area. No definite opinion about the neurological situation was expressed at that time.

#### **Mental Status:**

The first few days after admission patient would get out of bed, pound at the door and demanded that he be permitted to go home. Though often threatening, he was not actually aggressive. He was suspicious of any medicine for several days. He would call other patients and tell them of his past life experiences. He was rather bitter about the treatment he had received in the other hospitals and he talked of suing the hospital for detaining him longer than 24 hours. He said that he would get even with his father and the patrolman who arrested him. He was often boastful and commanding; at other times he was quite cheerful and facetious. Attention was easily diverted. Talkativeness and a tendency to grandiosity dominated the mental picture. His complaints concerning his visual difficulty were not quite substantiated by the facts as he appeared to be



well able to distinguish colors in spite of his denial. Very suddenly a profound change occurred in patient's behavior. His headaches became so severe that he declined to talk. He lay in bed with his face buried in the pillow. He was anxious to avoid any movement of his head. He ate poorly. He became drowsy and expired unexpectedly without any warning symptoms other than those just mentioned.

#### Autopsy Report:

Brain weight: 1775 grams. Skull and dura mater normal. The convolutions are well developed, and the sulci narrow and flattened. The brain substance is softer than normal. There is extensive generalized vascular congestion. The basal vessels are free from sclerosis. Multiple coronal sections of the brain show a marked enlargement of the lateral and third ventricles. The cerebellum is enlarged, fluctuant and shows a fairly marked pressure cone. Transverse incision shows a large cyst occupying the medullary substance of the vermis and cerebellar hemispheres. This cyst has no connection with the aqueduct or fourth ventricle. It contains clear, pale yellow fluid, which is partially thin and partially gelatinous. The walls of the cavity are glistening and pale except for a smooth protruding area of pink to dark red color, 1.5 cm in diameter. On a sagittal section the reddish matter reaches the inferior surface of the cerebellum. Microscopically the tumor was revealed to be a hemangioblastoma with presence of foamy pseudo-xanthomatous cells which apparently are characteristic of this type of tumor.

#### Summary:

To sum up this case, the patient, suspected to suffer from a mass lesion on first view, became mentally deranged to such an extent that the original assumption was pushed into the background. His mental reactions were undoubtedly of a functional type, appearing to be a text-book example of a cyclothymic reaction. The diagnosis of a Recurrent Maniacal Reaction was supported by the history of a former attack and by the statement of patient's father that the present attack just like the previous one was precipitated by

disappointment in patient's professional career. The possibility of a brain tumor could not be definitely discarded for reason of a rather typical history and the however rudimentary organic neurologic syndrome.

An interpretation of the mental symptoms in relation to the anatomical findings may be attempted. Maniacal reactions were described as the result of various factors concerned with the nature of the underlying pathological process. In our case the maniacal reaction was apparent throughout the course of the disease and ostensibly underwent but minor modifications according to the fluctuations in his physical state. It seems to be logical to assume that the maniacal reaction was precipitated by the organic lesion. We did not feel that the maniacal syndrome of this patient could have any focal significance. To regard its presence as consistent with the general tumor symptomatology would not be in agreement with the fact that the typical, general symptoms in this case supervened two days prior to his death. Thus two different categories of symptoms could be separated easily, those classifiable as a reaction of the integrated personality on one hand, and those ascribable to the intracranial pressure conditions, affecting essentially the sensorium of the patient, on the other.

Realizing that the mental manifestations of functional character as presented by our patient, were a definite obstacle to the early recognition of their physical basis, we, too, like to emphasize the fallacy incurring in the purely functional evaluation of functional symptoms encountered in psychotic patients.

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#### INSUFFICIENCY IN THE ADRENAL CORTEX

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After enjoying a period of popularity as the "orchestra conductor" and "general

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headquarters" of the endocrine system the hypophysis has yielded a portion of the first place of interest which it occupied for so many years to the adrenal glands. Certain endocrine relationships are so closely interwoven that the greater importance of one gland over another becomes debatable ground, but the fact remains, that life can be sustained, although with distressing deficiency sequelae, in the absence of the hypophysis, but if all adrenal tissue is lacking, the organism soon succumbs. It is true that the removal of the medullary substance of the adrenal gland alone does not interfere with maintaining life, but once all cortical substance is removed from the body, death ensues with relative rapidity. It has been conclusively demonstrated that the adrenal medulla is not essential to life but that its secretion is a sympathetomimetic substance which is discharged into the system as required by the body in response to various types of stimuli such as cold, fear, anger, etc., and functions as an emergency mechanism to maintain homeostasis. Interest, at present, is directed largely toward the cortical substance, and it is with deficiency states of this substance with which we are now concerned.

Addison's disease represents an extreme degree of cortical insufficiency. Its clinical manifestations were fully described by Addison in 1855 and are too well known to require repetition here. However, of the cause or causes underlying the breakdown of the physiological processes in this disease nothing was known. But the past has witnessed prolific research directed toward elucidation of the role played by the adrenal cortex with the result that at least some progress has been made in treatment and a more clearly defined recognition of cortical insufficiency states attained. How the cortical hormone produces changes in the body is not entirely clear. Though no one specific action can be ascribed to it, it is obvious that the hormone activates many basic chemical reactions upon which the normal functioning of physiological processes depends.

Deficiency of the cortical secretion manifests itself by producing dysfunction in various organs and tissues. Kidney function is interfered with producing a change in the electrolytes of the blood; cholesterol and car-

bohydrate metabolism are altered because of disordered liver function and there are definite changes in the chemical processes taking place within muscle tissue producing muscular asthenia. As a result of the inability of the kidney to function normally, water, sodium and chloride are excreted in excess while the blood plasma shows a consequent decrease in the sodium and chloride ions. On the other hand, potassium and phosphorus are found to be increased in the plasma of the blood. Other waste products such as urea are retained in the blood. Administration of the cortical hormone promptly tends to restore the sodium and chloride ions in the blood and to decrease the potassium content of the plasma. The reason for the increase in the potassium ion in the blood plasma has not yet been conclusively demonstrated but it is not due to the ingestion of potassium because adrenalectomized animals show this increase even with diets low in potassium. A possible hypothesis is that where cortical insufficiency exists the tissues are unable to fix potassium and that the kidney is unable to regulate its excretion so that its normal level can be maintained in the blood. Allers, Wilson and Kendall are of the opinion that cortical insufficiency is brought about by the increase of the potassium ion in the blood plasma rather than by the decrease of the sodium and chloride ions.

The N. P. N. of the blood of adrenalectomized dogs may show a marked increase but the experimental data would not justify acceptance of N. P. N. blood values as criteria of cortical insufficiency. Hypoglycemia of varying degree is a constant accompaniment of insufficiency, and is evidence of the liver's inability to effectively regulate carbohydrate metabolism. Alterations in the chemical processes within the muscles take place; muscle glycogen and phosphagen are decreased while lactic acid is usually increased. Such alterations are regularly accompanied by muscular asthenia.

When the symptoms of Addison's disease include the typical pigmentation diagnosis offers very little, if any, difficulty. A certain percentage of cases, however, fail to show the characteristic pigmentation and in such instances, as well as in less extreme states of cortical insufficiency a dependable diagnostic laboratory procedure would be very valuable.

Such a procedure has been reported by Cutler, Power and Wilder. The test is based upon the patient's decreased ability to retain the sodium and chloride ion when salt is restricted in the diet. The test is performed as follows:

"A diet is given which through its low salt content provides 0.95 Gm. chloride ion, 0.59 Gm. sodium ion and 4.1 Gm. potassium. Fluid is allowed in unmeasured quantities during the first day, but the second day fluid intake is made to equal 40 c. c. per Kg. body weight. The third day, 20 c. c. liquid per Kg. is given before 11 A. M. Potassium citrate, 42 mg. per lb. body weight, is given the afternoon of the first day and repeated the morning of the second day. Urine is collected in three periods; from 8 A. M. to 8 P. M. of the second day, from 8 P. M. to 8 A. M. of the third day, and from 8 A. M. to 12 noon of the third day. Blood is also taken in an oiled syringe at 8 A. M. on the second day and at 10 A. M. on the third day. This blood is transferred to cooled hematocrit tubes containing heparin and oil and the plasma separated by means of a refrigerated centrifuge."

In general the blood sodium and chloride values were lower in Addison's disease while the serum potassium was somewhat higher. However, variations were so wide that these findings were not diagnostic. The most significant findings occurred in the last specimen of urine in which the quantity of sodium and chloride excreted always showed a definite increase. The authors conclude that whenever the excretion of chloride exceeds 225 mg. per 100 c. c. adrenal cortical insufficiency is present. Normal cortical function is assumed to be present when the chloride excretion during the test period is 125 mg. or less per 100 c. c. of urine. This procedure is relatively simple and gives promise of proving preferable to the therapeutic test with cortical hormone and the potassium tolerance estimation.

Aqueous and saline extracts of the adrenal cortical hormone are almost entirely destroyed by the intestinal secretions. Glycerol preparations or the charcoal adsorbate, are more effective in oral therapy but the dosage required is approximately three times that used when the hormone is given subcutaneously. For subcutaneous injections either a pure aqueous, normal saline or dilute alcohol preparation

may be employed. These preparations may also be used intravenously if an emergency pertains. Kendall, Reichstein and Wintersteiner have recently isolated certain steroid derivatives from adrenal cortical extracts. These seem to be related to hormones found in the reproductive system. The most effective is a crystalline derivative, desoxycorticosterone, in turn a derivative of progesterone. This substance is probably not identical with the natural hormone but it will, nevertheless, maintain an adrenalectomized animal in good health when given in adequate amounts. It may be administered in the form of its acetate or pellets may be implanted subcutaneously.

Recognition of the changes taking place in the breakdown of physiologic processes during cortical insufficiency point the way toward effective treatment. Three important facts must be kept in mind:

1. That therapy should have as its objective not only amelioration of symptoms but a restoration of the patient's ability to perform an occupation and earn a livelihood.
2. That the mineral balance is always disturbed.
3. That carbohydrate function is disordered.

The choice of treatment depends upon the degree of insufficiency and upon the individual response of the patient. Certain cases make an adequate response to an increased intake of sodium chloride alone. Others require a limitation of potassium intake in the diet plus the increased sodium chloride. Almost all patients require at least some cortical hormone replacement therapy. Those whose insufficiency is not too severe may obtain adequate results with oral therapy in addition to an increased sodium chloride intake. This should be given either in the form of the glycerol preparation or the charcoal adsorbate. It has been definitely established that better results are obtained when the cortical hormone is administered in smaller doses at more frequent intervals rather than in one large daily dose. Therefore, the oral preparation, when replacement therapy does not demand too large a dosage, is distinctly preferable. In other cases the subcutaneous and intramuscular preparations must be used and in a crisis the employment of the intravenous route



becomes imperative. Effective replacement therapy with the addition of sodium chloride always restores the electrolyte balance of the blood but does not always correct the disordered carbohydrate metabolism. All diets should therefore contain a sufficient amount of readily available carbohydrate to prevent the occurrence of hypoglycemic states.

It is the diagnosis of cortical adrenal insufficiency in those patients who do not present a full blown Addison's disease that offers a real challenge. This group of patients is made up of hypotensive subjects with varying degrees of muscular asthenia and lack of endurance. It is probably larger than we know, and always difficult of diagnosis. The determination of the electrolyte balance in response to cortical therapy is a reliable diagnostic measure but a difficult procedure. Laboratory tests based upon withdrawal of sodium chloride intake carry with them an element of danger to the patient. Thus, at present, the therapeutic response to hormone therapy seems the most practical diagnostic method.

Addison's disease is a comparatively rare malady. It is upon the larger group suffering from the milder forms of insufficiency that a better understanding of cortical pathology and an adequate preparation of the hormone will confer an invaluable aid.

#### PSYCHOSIS ASSOCIATED WITH PSYCHOPATHIC CONSTITUTION

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Psychopathic personalities are social misfits with antisocial tendencies; they are individuals of constitutionally inferior stock, who cannot learn by experience. Although they may be intellectually highly endowed, they lack ethical conception or they are morally blind. That is the reason why they were called moral imbecils, or moral deficiencies in the past. Their unethical tendencies are deep rooted and cannot be thrashed out by moralizations, punishments, or by legal procedures.

Kraepelin distinguished psychopathic personalities from psychopathic states. Among the former he included the born criminal, the

emotional unstable, the morbid liar, the pseudoquerulent, the swindler. He characterized them all as suffering from a general deviation of the normal mental life rather than from any definite disease process. The second group are characterized by excitability, impulsiveness, eccentricity and other features which render their conduct asocial.

In the following discussion about psychopaths we will see that we have to deal not only with a social problem but with a psychobiologic factor because psychopathic individuals are referred to as constitutional psychopathic inferiors. The disorders of personality structure are of life long duration and the following variety of types are seen: The rigid and unbending, the weak and vacillating, the emotionally labile or explosive, depressed or elated, the peculiar aloof, cold thinkers and fanatics. According to Eugene Kahn psychopaths show deviations in the impulse life, temperament, ego and character. All the various types of sex variants are included among those who show deviations in impulse life as homosexuality, pedophilia, fetichism, exhibitionism, sadism, masochism. For the disturbances of temperament he outlines three main groups:

I. Hyperthymic—the vivacious, cheerful, excitable and explosive.

II. Hypothymic—the phlegmatic, torpid, affectless.

III. Dysphoric—the anxious, morose, gloomy, poikilothymic.

He states that manifestation of ego is seen most clearly in character developments. By character he means the directedness of the personality, the totality of its voluntary strivings toward certain goals. Furthermore he distinguishes the active autist and egocentric; the passive autist and the egosearcher; the ambitendent. He stresses and emphasizes that the problems of the psychopath in daily life are just the same as those of other people but the psychopaths meet them in distorted ways due to fundamental factors of inferior constitution. Contrary to behaviorists, he believes that environment while greatly influencing the personality is merely the medium in which the personality asserts or fails to assert itself. He states that

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from the psychiatric point of view maladjustment is the ultimate crux of the psychopath as regards man and his environment.

Not all criminals and delinquents are psychopaths but only a certain type of individual whose ill instructions and blind emotions of hatred and greed direct their conduct against society; they possess a lack of moral judgment and ethical notions.

Some commit crime without premeditation but under the influence of an impulse, they follow blindly the abnormal instinctive drive. They take no thought of consequences either as affecting themselves or others. The intelligence of psychopaths varies. They may be very brilliant or poorly endowed but since early life all fail to adjust to life demands.

Psychopathic individuals may display psychotic manifestations and in mental hospitals frequently the psychosis is diagnosed as such, but the constitutional or endogenous inferiority factor is entirely overlooked and the prognosis is considered much more favorable than it should be. The individuals are frequently recommitted to state hospitals. As these individuals wander around from state to state they frequently are inmates in more than one state hospital and the psychosis is differently diagnosed. To illustrate this, let me present three cases from the records of the Delaware State Hospital.

J. G., 35 years of age, was admitted to the Delaware State Hospital, December 7, 1938 from the New Castle County Workhouse on a court order. In September of that same year he had pleaded guilty to three offenses of obtaining money under false pretenses and was sentenced to three months in the workhouse.

The court and prison records contain at least twelve charges made against him from November 8, 1930 to August, 1938, of the same type for which he was imprisoned.

Patient was born in New Jersey. He attended public school, reaching the fourth year of high school, but quit in his last month because he was afraid that he would not be graduated with his class. He was never able to hold a job for any length of time, even though most of his employers agreed that he had ability. His only sister, a school teach-

er, states that he tried to achieve success immediately and by so doing usually wove his way into considerable trouble. Though in business for himself several times, each business venture ended in complete failure. Although quick tempered, he made friends easily and was generally liked. His first marriage ended in a divorce about ten years ago. He was married the second time in Elkton in April, 1938. Patient and his wife had known each other only a short time. Patient had told his wife that he was quite wealthy and would be able to give her everything to make her happy. A few days after their marriage, she discovered that he had passed a worthless check to a druggist and that he had also contracted several bills in Wilmington stores, charging the purchases to her account, at the same time giving them to her as presents. She also discovered that he had stolen forty-five dollars from her pocket book, and it is her belief that he stole money from her father. Patient also opened a joint checking account at a Wilmington bank but never allowed her to make use of it, always giving some excuse to prevent her from doing so.

While in the New Castle County Workhouse, patient was referred to the Mental Hygiene Clinic of the Delaware State Hospital. A psychometric given October 11, 1938, showed the following results:

	IQ
Terman Vocabulary .....	109
Stanford-Binet .....	98
Army Performance .....	91

The results of this examination were summarized as follows: "Dysfunctioning are apparent in the test variability, poor memory control and poor social judgment."

On admission to the hospital he was observed to be talkative and vigorously antagonistic. He declared that he was not going to stand for being "framed." While being brought to the Superintendent's office he used very profane language, denounced the authorities of the workhouse, called them liars and cowards. He declared that he was deceived by the workhouse authorities. He represented himself as a "tough citizen," stating he would not allow anybody to

"monkey" with him, threatened to kill the warden after his dismissal and threatened proceedings against the hospital authorities.

On December 17, patient managed, with the help of a spoon, to remove the screws from the window screen in his room, destroyed the mattress of his bed, and his pillow cases. He continued resentful and vindictive. Usually after rigid measures had been applied for a certain time, he would become more reasonable and calm. He evolved his ideas about the way his case should be handled in a very convincing, suggestive manner. He stressed and emphasized his excellent memory as proof of not being mentally ill. The calm periods soon gave way to a period of bellicose animosity during which he threatened with violence and revengeful acts. He would frequently attempt to cause confusion by giving contradictory information to different people and would talk in a grandiose manner about his abilities and claimed that he had obtained a bachelor's degree at Brown University. He also claimed that he had invented a chemical method by which to convert diamonds of minor value to blue-white stones having an extremely great market value.

On February 2, 1939, patient was transferred to Marlboro State Hospital in New Jersey, and was discharged from there on February 11, 1939, going to his mother's home.

This patient showed antisocial tendencies for many years. He failed in business and marital life. Although we do not have any information in regard to his early development, we know definitely that he caused his family much trouble for a considerable length of time. His sister stated in a letter to the hospital, "He has caused himself and us no end of trouble due to the fact that he magnifies things to such an extent that at first one is apt to believe him. As things unfold, he realizes that he cannot carry out his ideas to a successful finish. He lies to keep from acknowledging defeat. As soon as things come out he refuses to discuss it further unless forced. He is extremely generous and has never gained personally by any of his wrong doing." Patient being a psychopath,

displayed also psychotic manifestations. He showed ill humor, temper tantrums and frankly paranoid reactions.

The second case is that of R. S., aged 30, who was committed to the hospital, in November, 1936. Her family history shows that her father was a bartender and heavy drinker. One maternal uncle was an inmate at the Delaware State Hospital for years. Patient's mother and father were separated for some years before his death.

Patient was born July 16, 1906 in Wilmington. Early development was retarded. She had the usual childhood diseases and has been slightly injured in four automobile accidents in recent years. She states that she never got further in school than the third grade and was never interested in school. She was always sociable and liked to have people about. She worked in a store for a time and in a mill, then she won a contest of some sort and went on the stage as a dancer. For the next few years she traveled all over the country and apparently was doing quite well until she began to drink excessively. The first time her mother knew of her drinking was about 8 or 9 years ago when she was in a hospital in Miami suffering from delirium tremens, at which time she was given bromides, and she has taken them ever since. For about six years she has not done any work and has been drinking most of the time. She was married about four years ago, but because her husband was unemployed much of the time, they have lived with patient's mother. There have not been any pregnancies. Until about two years ago she would often leave the house and come back extremely intoxicated. After that her mother watched her closely but she still had extreme craving for liquor once a month. When drinking she fought her mother, saw imaginary things and was afraid of the dark. Her mother said that after recovering she denied any recollection of what she had done and was very weak and nervous. The mother had also restricted her to two doses of bromides as excessive amounts of it caused her to talk irrationally. On one occasion however, after excessive drinking,



she asked to be committed and this was done November 5, 1936.

On admission the patient was rather tense and agitated due to her recent drinking but was much quieter and more composed the next day. She seemed a little afraid of some of the patients and kept to herself most of the time. She ate well and took mild sedatives at night. There was considerable restrained irritability present which would break out for a moment and then be well controlled. There was no disorder of the stream of thought, questions were well answered, but no information was volunteered. She gave a free history of hallucinations in the past but did not admit any recently and no delusions were in evidence. Patient told of having delirium tremens as in the history but was inclined to minimize the effects of bromides, insisting that the symptoms were due to alcohol. Most of her hallucinations were of sight, and she told of leaving the light on at night to prevent them. Patient admitted that she has been drinking since the age of 15, but denied any psychic factor responsible for it. There was no impairment of orientation or memory and no deterioration was observed.

On November 9, only four days after admission patient escaped from the hospital in company with her mother and she was allowed to stay at home. She was returned about a month later by her mother, who stated that the whole time she was home, patient had been drinking steadily, was growing quite unmanageable and was also using quantities of phenobarbital. Her associates were a low type of alcoholics, and her husband spent most of his time finding her and bringing her home. Three days after her return, she again escaped, but was brought back immediately from her home. After a while she was allowed to go home for visits, when she apparently drank a little but did not become intoxicated.

Patient was paroled against the wish and advice of the Superintendent, February 27, 1937. Since then patient has been returned from parole and re-paroled on five different occasions, with no noticeable change in her behavior.

Patient cannot make adjustment to a normal regular life and remains addicted to alcohol and sedatives. She is socially irresponsible, sexually promiscuous, emotionally immature, and frequently sulks. Her suicidal attempts are partly influenced by intoxication but also by impulsiveness. She continues to associate with undesirable persons and actually is not engaged in any useful activities.

The third case is that of H. H., who was admitted at the age of 37 years in January, 1938. The family history shows that patient's mother was mentally ill a week previous to her death in 1900. One maternal aunt was mentally ill and a paternal uncle died while in prison.

Patient was born 37 years ago in Albany, N. Y. His mother died when he was 13 days old and he was brought up by his father. He never received the care the average child would have. When seven or eight years old he talked of things and acted like boys of fifteen or sixteen. He was considered exceptionally bright in school but he did not finish the academy which he attended. Until 1919 he lived with his father and step-mother, then he left home, going to New York City and then to Philadelphia where he tried to earn a living. He held many positions and was never considered efficient or successful. Patient never married.

As a child, he always kept to himself and never took part in any ordinary games, seeming to enjoy being alone, reading and talking with his father.

Since 1919, a considerable part of his time has been spent in mental hospitals. His first admission was to the Hudson River State Hospital, in December, 1919, where he remained until December, 1923. He was diagnosed as a Dementia Praecox. He was again committed to the same hospital in October, 1925 and this time was discharged in August, 1927. The diagnosis was the same. He was readmitted a third time in February, 1929, and again discharged in October, 1930. He was again diagnosed as Dementia Praecox but with the addition of Paranoid type. His fourth admission was to the St. Elizabeth's Hospital in June, 1931. He was discharged

from there in July, 1931 with a diagnosis of Manic Depressive Psychosis. His fifth admission was to the Hudson River State Hospital in July, 1931. He was discharged November, 1932. The diagnosis at that time was changed to Manic Depressive Psychosis. He was again readmitted to the Hudson River State Hospital, being transferred there from the Cleveland, Ohio State Hospital, where he was arrested in a hotel. He had been claiming that he was a government officer. He was discharged in May, 1939.

A review of his previous admissions showed that patient had an abnormal hereditary and environmental background. He developed a psychosis in 1917 and two years later was first committed to an institution. Throughout his various commitments, he has exhibited paranoid ideas with grandiose coloring, has had a mania for telephoning and writing letters to people and business concerns. In the last three admissions he has exhibited a flight of ideas. He has at times displayed many of the characteristics of a psychopathic personality with a psychosexual underdevelopment, always seclusive, self-satisfied, with an exaggerated idea of himself and his activities. This opinion of himself is so strong in the patient's mind that he does not seem to be aware of his own short-comings. He continually rationalized and minimized his past and present difficulties. His physical examinations were always negative.

The outstanding characteristic on his admission to this hospital was his volubility with some verbal aggressiveness but no physical violence, grandiose trends (He stated that he is a secret service agent of the State Department, wrote constantly to various individuals and corporations, and at one time to the British ambassador), restlessness, and apparent inability to apply himself to anything for any length of time. At first his letters were incoherent, and almost indecipherable, but later became more connected. He frequently followed the physician around, proffering unsolicited advice. His attention could be easily diverted. There was no impairment of memory or orientation. He manifested various paranoid ideas.

For instance he stated that he was being persecuted by various individuals and corporations and that people were going around taking his mail. His conversation was always coherent and relevant but so detailed that he had to be frequently interrupted in order to return to the subject under discussion.

In conclusion it is important to emphasize that everyone of these patients failed to adjust to life demands and they never learned by experience. While openly displaying psychotic manifestations, they were taken care of, but as soon as the psychosis improved they were left without supervision. Psychopathic personalities cannot control their behavior any more than epileptics their convulsive seizures, or a malaria patient his fever spells.

The task of the psychiatrist is not only to take care of the patient but he has to consider the welfare of the community.

Psychopaths are predisposed constitutionally to fall victims of their antisocial and criminal impulses and are apt to cause considerable damage to society. Though there is no definite cure for such type of patients, they should be given a chance to adjust their existences to a life which is wisely controlled and directed.

### PREVENTIVE PSYCHIATRY

#### A Presentation of Two Cases from the Child Guidance Clinic to Illustrate Treatment Methods

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The more intensively we study the lives of our adult psychoneurotics, the more apparent it becomes that their emotional difficulties had their beginnings in childhood. In not a few cases their unhealthy attitudes appear to be the outgrowth of ineffectual, childish reactions to emotional crises in early life which, for some reason, they were ill prepared to meet at that time.

In the Child Guidance Clinic we meet children who are apparently in the midst of just such crises, who are finding unhealthy solutions to them and possibly sowing seeds for a future neurosis. It affords us a unique op-

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portunity to reach at its source this particular phase of psychopathology.

We are presenting two cases to illustrate our general approach and treatment in cases of this type.

*CASE 1. Personality Problems in a Ten-Year-Old Boy.*

Charles was referred by his school principal with this ominous report: "He wants to boss other children but is unable to take up for himself. He is talkative, restless, unruly, disobedient, cruel, pugnacious, irresponsible, fault finding and peevish. He sits in school and makes queer faces and noises. He is constantly wiggling his feet."

When Charles presented himself to the clinic, it was a surprise to meet a polite, friendly, good-natured youngster who seemed unusually bright for his age. When we became better acquainted with him we were even more astonished at the difference between our impression of him and that given in the report. Charles declared that all the other boys in his neighborhood save one were very bad, that they destroyed property, used foul language, and were always fighting among themselves. He explained that being a "nice boy" he didn't believe in fighting and always ran away when challenged. Boys' games, like baseball, he never indulged in because they were too rough. There was always the chance that one might break an arm or sprain an ankle or at least get uncomfortably sweaty from being out in the hot sun.

Between the ages of four and six, Charles had been the target for an unusual amount of taunts and threats from the children in the neighborhood. His mother thought them too rough and kept Charles in his own backyard. The boys retaliated by tossing stones over the fence and making fun of their nice little neighbor. Charles was thus made to feel that he was the only good boy in the midst of a gang of ruffians. Several times Charles was actually hit by stones and one of the offenders later became a Juvenile Court case. These facts lent objective support to the child's fears and helped to cloud the issue.

The family moved several times, but somehow Charles always had trouble making friends. As he became older he too threw stones but was sharply reprimanded. This method of defense being prohibited, he there-

after regarded all his companions as potential enemies and ran at the first challenge.

One might conceive of his emotional difficulty as an effort to cling to an infantile pattern of behavior that originally was a very natural means of self-defense. An unusual number of frights plus parental over-concern, made him continue to run away long after most boys would have learned to establish respect by fighting it out.

Psychological testing yielded some additional information which partially explained his restlessness in school. He was of superior intelligence but was having difficulty in learning to read due to the fact that having once been left-handed he had a laterality conflict causing him to confuse the letters b, d, p, and g. In children having a tendency toward left-handedness, whether manifest or hidden, reversals not only of letters but of words are not uncommon. Current methods of teaching reading by sight without an alphabetical foundation impose a great handicap on these children. Their reading disability is often mistaken by the teachers for disinterest or laziness. The scoldings and punishments that follow only serve to intensify the conflict.

The psychologist's findings on Charles were as follows:

Revised Vocabulary Test:	CA: 10.0	MA: 10-8	IQ: 107
Cornell Coxe Performance Test			13-5
Stanford Binet (L)	9-10	10-6	134

The physical examination showed him to be in good health and there was nothing unusual in the medical history.

Treatment involved modifying certain attitudes on the part of the parents, the boy, and the school.

First, we did the most obvious things such as providing for more normal everyday contacts by suggesting that Charles be allowed to play with the neighborhood children even though some of them were rough. (The father explained that in their present neighborhood there were two bullies but that the others merely indulged in the usual boyhood rough-house and were not malicious.) Arrangements were also made for him to participate twice a week in the boys' program of the local Y. M. C. A. He chose to join groups in gym work, swimming, and photography. No special attention from the Y. M. C. A. secretary was solicited since our purpose was to help



Charles learn to adjust, not to do the adjusting for him. His parents had made the mistake of erecting buffers around him, thus depriving him of valuable training in self-help.

Periodic interviews were arranged with the parents providing an opportunity for discussion of whatever difficulties seemed uppermost at the moment. The psychologist instructed the mother on how to help the boy remedy his reading disability.

A formal report was sent to the school principal summarizing the clinic's findings and suggesting ways of helping this particular boy with his school difficulties. The social worker obtained periodic reports from the school on his progress.

Charles was given regular weekly interviews scheduled to coincide with those of another boy the same age. For the first half hour the play technique was used. They painted pictures of whatever their fancy dictated or constructed kites, airplanes, or other toys at the work bench. This gave an opportunity to observe the boy's social reactions before interviewing each individually.

The psychiatrist always avoids forcing his ideas upon the child and tries instead to make him discover within himself resources with which to overcome his difficulties. We have selected for illustration four important aspects of therapeutic technique in order that the reader may have a more definite idea of what transpires during a psychiatric interview with a child.

1. Secret fears and hates that the patient may be nurturing within himself we want brought out into the open so that any undue emotional stress attached to them can be discharged.

The principal method of ventilating such feelings is to get the child in the habit of speaking his mind freely. When he finds a sympathetic tolerant ear the material often begins to pour out, but if it doesn't, leading questions are posed as tactfully as possible. Care is taken to prevent too much unburdening at one time as that might cause the patient to be more upset than before. Reassurances must be added by the therapist from time to time, lest the patient suffer from guilt feelings over what he has revealed. Adjuncts to this form of free discussion are dreams which sometimes disclose repressed feelings and play

activities like painting which may reflect certain personality problems. In Charles' case free discussion proved the most effective. Occasionally some of his paintings served as points of departure for further discussion.

His first painting was that of a rabbit and a deer and he spoke of his admiration for these passive animals who outran their enemies. This led to a discussion of *Bambi*, a story of a deer which he had been reading. He liked to compare himself with Bambi who could run swiftly and hide artfully. He asked if the old buck's admonition to Bambi to live alone applied also to him. He talked at length about his fear of other boys and confessed an abhorrence for things rough and masculine.

He did at times, however, reveal a cruel side to his personality. Later in the treatment when the psychiatrist mentioned that Bambi did fight when he became older, Charles explained that Bambi then had antlers. When asked what he would do had he antlers like Bambi, he fancied how he would gore to death three of his classmates whom he particularly disliked. One day his anger was directed against his father whom he finally accused of not taking enough interest in him. Another day it was against his little brother whom he accused of being a cheat.

2. Flights away from reality into the realm of phantasy must be gently checked and the child brought back to face his real problems. Sometimes he would describe how perilous it was for him to venture far from home because he might be waylaid at any moment by a band of desperate ruffians. Reluctantly he finally admitted that he exaggerated. Once he solemnly described a pain in the leg which he claimed to have had constantly ever since he could remember. After a physical examination in which no objective evidence of pain was elicited, the physician ignored this attention-getting mechanism with the result that Charles never mentioned it again.

3. When a patient makes a step in the right direction he must be given prompt encouragement.

As Charles became more self-assertive he began to fight back instead of taking flight. Not having had much pugilistic experience he came home with a black eye one week and a scratched face the next. The psychiatrist was

sympathetic but emphasis was put on the fact that he was not being molested and teased as much as formerly. It was suggested that he might learn some good wrestling holds from the gymnasium teacher at the Y.

During one of the play sessions, Charles, of his own accord, brought in materials and showed the other boy how to make a kite. Afterwards he gave it to him. This kindness received immediate approbation from the psychiatrist and the next week Charles brought in materials for making bows and arrows. Charles was manually dexterous and was finding within himself a resource for winning the approval and friendship of others.

It so happened that this state of affairs was equally beneficial to the other boy who came from an underprivileged home and had been feeling neglected. He was greatly pleased with his new toys and was learning to become more resourceful himself.

4. A strong feeling of confidence in the physician will be the sine qua non of the whole enterprise for without faith in the doctor's constant reassurances, the patient would be afraid to face his personality. Though his parents and teachers had manifested a sympathetic interest in his problems, that had not been enough to solve them. The function of the psychiatrist was to foresee where the child's resistance was going to lie and prepare for it in advance. For instance his parents had admonished him to stand up and fight like a man and suggested that he ought to take boxing lessons. Logical as these prescriptions were, their effect was just the opposite of what had been desired. Charles had firmly announced that he would be willing to do nearly everything at the Y except fight. The key to the situation lay in the fact that he was not yet ready for such suggestions. He had built up an elaborate justification for his cowardice, likening himself to a deer and taking pride in his swift legs and knowledge of all the best hiding places. If he were to accept his parents' admonition in this matter, it would have been a severe blow to his pride and self-respect, an admission that he really was what the other boys called him, a coward and a sissy.

Weeks of patient psychotherapy were necessary before Charles did eventually recognize his faults and begin to correct them. When

he did so, he did it spontaneously and of his own accord.

#### *Comments:*

Charles is still under treatment. At the time of this writing he has had twelve interviews, a week apart, and marked improvement is already in evidence. The school reports that they are no longer having any trouble with him, and the parents have noticed a corresponding improvement. Treatment will probably be continued for several more months to allow time for other problems to come to the surface and to consolidate the gains made. Further discussion will be held with the parents to correct faulty attitudes as they arise. Their confidence gained they will be ready for more suggestions.

#### *CASE II: Sleep Disturbances in An Eleven-Year-Old Boy.*

George was referred by his family physician because of a combination of sleep disturbances of five years' duration. They included nightmares and sleep walking, but the most troublesome were night terrors which had occurred regularly every night for the preceding ten months. About an hour or two after retiring he would jump up in bed, scream and frantically try to ward off the attack of imaginary dogs or playmates. His anxious mother would try to comfort him only to be pushed away with some such remark as, "Oh, mother, don't touch me. Get away from me." The whole affair subsided after about five or ten minutes. He slept quietly for the remainder of the night and had no recollection of the event the following morning.

The sleep walking was less frequent. He would quietly get out of bed and walk downstairs in a clouded state of consciousness.

The nightmares were dreams that someone was going to kill him, but the imaginary enemy was not identified.

During the initial interview George was found to be a bright, well-mannered lad with a friendly, good-natured disposition. He was closely attached to his mother who usually accompanied him to the clinic. One sensed that he derived no small satisfaction from the fact that his symptoms were receiving so much attention. He was inclined to be overconcerned about his health and magnified trifles. For example, he found a leaflet on Infantile Paralysis which listed the various symptoms.

His eyes singled out *backache*. He recalled that he had once had a backache and worried for the ensuing week lest he have the disease.

Physically he was in good health and there was nothing of particular significance in the medical history.

Psychological testing showed him to be better than average in native intelligence. The psychologist's findings were as follows:

Revised Vocabulary Test:	CA: 11-1	MA: 13-0	IQ: 118
Stanford Binet .....		12-8	114
Cornell Coxe Performance .....		10-11	98
Memory Series .....		8-3	75

The mother was an attractive young woman who felt responsible for the boy's nervousness and was anxious for assistance. She had married at fifteen, remarried at twenty-three, but both matches had been unfortunate. Her second husband was quick tempered and a severe disciplinarian. His method was to frighten the boy into resentful submission. Her coaxing and scolding she said met with stubborn resistance and added, "I just don't understand children."

A review of the boy's personal history revealed many interesting facts that probably had a bearing on his symptoms. When he was a year old, his mother separated from her husband and took him to live with her parents. There they made their home for the next seven years. The boy's father lived in the same neighborhood and often came to visit him. Sometimes he would jokingly threaten to kidnap George.

During one of the therapeutic interviews, George vividly recalled an incident which happened to coincide with the onset of his sleep disturbances at the age of five. There had been much talk about his father kidnapping him and, being at an impressionable age, he had taken it very much to heart. One day when his father came to see him, George ran and his father chased him. In the boy's mind the long dreaded day had come. Screaming, he dashed into the house and begged for protection.

Another recollection the patient brought up concerned the overindulgent attitude of his grandparents. They had an adolescent son whom the patient idolized. This youth was babied and pampered and could usually ward off any punishment that was being contemplated by looking up at his mother with a fetching smile and pleading with her not to

hurt him. Witnessing this, the patient, in turn, began to capitalize on his "nervousness." He recalls protesting to his grandmother that she shouldn't punish him because it would be bad for his "nerves."

At the age of eight, when his mother remarried, he was taken to live in the new home. There were unhappy scenes when the stepfather would shout abusively at the boy's mother. If George were present he would cry and try to come to his mother's support.

After two years the mother separated temporarily and took the boy back to his grandparents for a few months. Then, motivated, so she said, by a desire to give her boy a home of his own, she decided to make up with her husband and they returned. They had been back for just about ten months when George was brought to the clinic. It will be recalled that the night terrors were described as having been much worse during these ten months.

Treatment was carried on by means of individual interviews with both the boy and his mother. Each of them were seen once a week for ten weeks. Improvement began during the second week and the sleep disturbances disappeared entirely during the sixth week.

Work with the mother covered several points. First the most obvious thing was suggested, namely that she refrain from giving him so much attention during the night, that the first few nights she merely offer a few words of reassurance and then leave his room, and subsequent nights not enter his room at all during the terrors. The next step was to allow her ample time to unburden her own troubles and to offer her a few reassurances. She had come to the clinic with a guilty conscience but had we tried to correct all her faults at once it would have put her on the defensive. As the boy improved, she gained confidence in the clinic and then an effort was made to correct some of her faulty attitudes.

What the mother had described as a stubborn refusal to mind turned out to be just a natural adolescent tendency toward self assertion. He resented being spoken to as though he were a small child. The mother was encouraged to take advantage of his high intelligence and sensitive makeup by first getting his point of view and then if necessary explaining to him a better way. Suggestions



were made for giving him little responsibilities about the home and encouraging him to take pride in not neglecting them.

The mother was requested not to disparage her husband or quarrel with him in front of George. It was explained that a boy, particularly one his age, needed a father or father substitute whom he could respect and emulate. This helped the mother to clarify her own ideas. Of her own volition she came to the conclusion that perhaps she was not really helping the boy by maintaining a home for him at the price of constant marital discord.

It might be added parenthetically that even though the psychiatrist feels sure in his own mind that two people would be better off separated, it is good practice to refrain from making any direct suggestions to that effect. These are decisions only the interested parties can make, and it is better that they make them independently.

During the first few sessions with George an easel and water colors were provided which he took to with enthusiasm. He was encouraged to paint whatever came into his mind at the moment. His productions served as starting points for the discussions that followed. As the boy got used to the clinic, the painting was discontinued in favor of direct interviews.

George was encouraged to talk freely about his feelings and conflicts. When he discovered that no censure was forthcoming he became bolder and unburdened a bitter contempt for his stepfather. After these negative feelings were discharged he expressed a more tolerant attitude, and this was utilized in helping him to make the best of his difficult home situation. When he revealed his insecurity feelings through unreasonable fears, he was reassured and helped to find security by making the most of his assets. In time a friendly relationship was established so that the physician's reassurances and suggestions carried considerable influence. He was encouraged to recollect early incidents in his life and they were used to give him a better understanding of himself. Although he did not disclose any evidence of beginning sex tensions, they might, in view of his early adolescence, be assumed. A certain amount of sex information was introduced into the discussions in-

cluding current medical views regarding masturbation.

Towards the end of the treatment, the mother announced her intention of separating again and soon after took the boy to live with an uncle in Ohio. As George liked the uncle, he welcomed this new arrangement.

#### *Comments:*

Usually sleep disturbances do not appear as isolated symptoms; frequently we find them in association with phobias, feeding problems, nailbiting, temper tantrums, and enuresis. Any of these symptoms, if troublesome, point to some deeper disturbance in the child's emotional life and warrant a child guidance study.

#### *Conclusion:*

It is perhaps not sufficiently stressed that a large number of children referred to our clinic for treatment are perfectly normal in intelligence and have good social backgrounds. They present no serious abnormalities in their personality makeup, but they are facing crises in their emotional development because of some serious maladjustment. As a consequence, they may be exhibiting neurotic traits like fears, ties, overactivity, conduct disturbances, like disobedience, truancy, stealing, or habit disturbances like enuresis, tantrums, or feeding difficulties.

Naturally this group responds best to treatment because we are dealing with children who have inherited good nervous systems to start with and who have had reasonably good upbringing.

As therapists we take pride in the fact that by treating this group we are nipping an insidious process in the bud. By attempting to correct neurotic or anti-social tendencies before it is too late, we hope we are on the road to a truly preventive psychiatry.

### **SURGICAL ASPECTS OF ESSENTIAL HYPERTENSION**

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Numerous surgical procedures have been applied for the relief of essential hypertension. The best known methods may be considered under the following heads:

1. Laminectomy with resection of the anterior spinal nerve roots.

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2. Resection of the splanchnic nerves.

3. Celiac ganglionectomy.

Of these three procedures laminectomy not only involves the surgeon in difficulties but constitutes the highest risk to the patient. It may be followed by serious complications, such as meningitis and transverse myelitis producing impairment of motor function of the extremities. The second procedure, resection of the splanchnic nerves, carries less risk to the patient, is a comparatively simple surgical procedure, but does not give as satisfactory results as those obtained by laminectomy. The third method is today considered by many the preferable surgical operative procedure. The surgical technic employed presents relatively little difficulty and has given favorable results. This method will be discussed later in more detail.

Before a surgical approach is chosen it is imperative that a differential diagnosis be made and a careful estimate of the patient's ability to respond to such treatment be ascertained.

The differential diagnosis between essential hypertension and the malignant form is sometimes difficult. Malignant hypertension may occur in any hypertensive individual with its sudden onset of severe headaches, stupor, cardiac irregularities, hemorrhages from the upper respiratory and urinary tract and hemorrhages in the retinal vessels with ensuing blindness. Diagnosis is sometimes made more difficult when the malignant form shows remissions and exacerbations or when the malignant form assumes the characteristics of essential hypertension following the administration of cyanates. In essential hypertension hereditary factors play an important role and the onset is usually insidious. Etiology is frequently obscure. Pathologic changes are not always severe; the kidneys and blood vessels may show only mild deviations from normal with no cardiac involvement. The fundi shows a varying degree of constriction in the retinal vessels with sclerosis. The patient may present neurotic symptoms, changes in personality or evidence of emotional instability. Palpitation and other vasomotor symptoms are outstanding signs. The dis-

ease terminates in cerebral hemorrhage, uremia or cardiac failure.

Studies in hypertension have been made by the experimental method.

1. Removal of the carotid sinus and the cardio-aortic moderator nerves were found to produce a rapid and permanent rise in blood pressure. But hypertension could be prevented or decreased by total sympathectomy. Removal of the adrenal gland, section of the splanchnic nerves or lumbar ganglionated chain resulted only in a temporary effect on the blood pressure. Hypertension so produced does not correspond to the usual clinical type but resembles that of patients with very labile blood pressures.

2. In the second type of experiment, renal ischemia was produced by clamping the renal arteries and resulted in severe, persistent hypertension. Hypertension in these instances could not be prevented by denervation of the renal pedicles or section of the splanchnic nerves above the diaphragm combined with excision of the lower four thoracic sympathetic ganglia. Neither did section of the anterior roots from the sixth dorsal to the second lumbar or total sympathectomy prevent the development of hypertension. But it should be mentioned that partial occlusion of the renal arteries with occlusion of the adrenal veins may prevent a hypertensive state. The conclusion was drawn that an "effective substance" is formed in the ischaemic kidney.

3. Cerebral ischemia produced by ligation of the carotid, vertebral and spinal arteries resulted in a permanent rise of blood pressure. This was believed to be due to anoxemia of the vasopressor centers.

Certain discrepancies make it questionable whether one is justified in drawing an analogy between essential hypertension in the human and any of the experimental forms. The "carotid sinus" type of hypertension will be alleviated by a total sympathectomy whereas the "renal ischemia type" does not respond to this procedure. Experimentally, at least, renal ischemia is not prevented by cutting off the vasoconstrictor sympathetic supply to the splanchnic vessels. In experimental hypertension there is not as a

rule a narrowing of the arterioles of the kidney due to a sclerotic process, which is to some degree a constant pathologic feature in essential hypertension. One may logically expect improvement by severing the vasoconstriction mechanism which should produce a dilatation of the arterioles inducing a better kidney function.

It becomes obvious that the selection of hypertensive cases for surgical interference requires careful discrimination and judgment. It is generally conceded that most patients carrying a high systolic pressure, in whom no etiologic factor can be demonstrated, belong to the essential hypertensive group. However, one may exclude from this class patients with Cushing's syndrome, adrenal tumors, certain hyperthyroid states, and carotid sinus disorders. The patient beyond 45 years of age, in whom the disease is accompanied by marked vascular changes, can expect no benefit from surgical intervention. The young adult, in whom the disease runs an acute, fulminating course, terminating in uremia within a short time, is also obviously a poor surgical risk. Adults under 45 years of age with vasomotor instability with hypertension in whom extensive vascular changes have not yet occurred offer the best prognosis.

Careful clinical studies should be made of cases in whom surgical intervention is anticipated. The patient should exhibit a severe degree of hypertension, the systolic pressure being 200 or more and the diastolic 100 or more. Whether or not they would respond to potassium sulphocyanate should be determined, the drug being given a trial of approximately several months to a year. Glomerular nephritis must not be present. Blood pressure should be checked under varying conditions, such as when patient is ambulatory, during periods of emotional stress, after meals, and during sleep. The nitroglycerine test is performed by putting 1/400 to 1/100 grain of nitroglycerine under the tongue and the drop in pressure ascertained every twenty minutes or until the pressure returns to normal. Also the changes in blood pressure during deep sodium amytal narcosis are obtained. Laboratory tests to

determine kidney function must be made. These include the fractional phenosulphone-phtalein test, urea clearance and the usual concentration and dilution tests. Blood chemistry studies should include total protein, uric acid, and blood and fluid volume, as well as cholesterol and blood sugar.

The question arises as to what constitutes a criterion of effective surgical therapy. It becomes apparent that there should be a classification of essential hypertension based upon type and degree of severity so that comparison of results at the hands of different workers may be of value. There is still a difference of opinion as to whether the lowering of the systolic or of the diastolic pressure is of greater significance as related to the patient's subjective improvement.

Crile, of Cleveland, Ohio, has performed 391 operations upon the adrenal sympathetic system in 230 patients which included 239 ganglionectomies in 144 patients. He judges the clinical results of these operations on the adrenal sympathetic system on the following basis:

1. By an examination of the eyegrounds, the heart, the kidney function and the blood pressure findings.

2. By knowledge as to whether or not the patient is able to go back to his usual occupation; whether or not the headaches, dizzy spells, failing vision, precordial pain, heart-consciousness and disability have diminished or disappeared.

As a result of celiac ganglionectomy Dr. Crile reports that the subjective symptoms were relieved over a period of at least a year in 78% of his patients. The eyesight improved and the patients were able to return to their normal occupations even though the blood pressure had not been restored to the normal level. The patients tended to become calmer and emotionally more stable and even in cases in which the blood pressure remained well above the normal level the broad variations of the blood pressure which may accompany emotional outbursts were lessened.

It was found that celiac ganglionectomy did not interfere with metabolism or with the digestive tract; no changes were record-



ed in the genito-urinary system; there were no changes in the skin and no change in sex function. The heart rate was not affected and there were no abnormal variations in the daily blood pressure. In no patient did adrenal insufficiency supervene. The mortality rate was 2.4%.

Freyberg and Peet report results obtained by bilateral supradiaphragmatic removal of the splanchnic nerves in 48 patients. Six patients showed a reduction in blood pressure to 160/100 or less; in eight cases the systolic pressure did not come down to 160 but these patients still showed a reduction of 60mm. In ten patients the systolic reduction lay between 30 and 60 mm; in 23 cases the pressure remained unchanged and in one case it was increased.

From a perusal of the literature relating to surgical procedures in essential hypertension one must conclude that the operative methods still leave much to be desired both from the standpoint of the surgeon and of the patient. As yet there is no satisfactory physiological explanation for the choice of surgical procedure or for the result obtained. Many cases are reported improved, but, until we have a better understanding of the hypertensive state and a more adequate criterion for choosing operative prospects as well as a criterion of what constitutes recovery, surgical therapy for this condition needs further investigation.

### THE IMPORTANCE OF THE ART DEPARTMENT FOR THE INTERPRETATION OF PSYCHIC STATES

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The art department is a subdivision of occupational therapy. There is, however, a fundamental difference, which separates it from all the other groups of occupational therapy: it does not merely "occupy" the patient but it appeals to his imagination, to his emotions and it demands spontaneous production. In the art department the patient does not "work," he creates.

This fact is of the greatest importance for the psychiatrist, because he may find access

to psychic states which will not show up on the wards, or will not become obvious in interviews. The art department under the guidance of an experienced and tactful artist may make the patient forget the hospital atmosphere, may give him an outlet for his emotions, may even become his only opportunity to express himself. Here arises also a chance for the psychiatrist to approach his patients from an entirely different basis than on the ward, where the relationship is necessarily that of patient-physician and where the patient's mental state is the thing which has more or less obviously to be dealt with. This relationship can be changed when the physician visits the patient while he works in the art department. Here the patient should under no circumstances have the feeling that his physician comes to "make rounds." Should the patient feel that way, should he believe that he is watched or asked questions for diagnostic or analytical purposes, then he would necessarily lose his spontaneity and confidence in the neutral atmosphere of the art department. He should, instead, believe that the physician visits the art department because he is interested in the artistic work as such. A discussion between patient and physician from a purely "artistic" point of view will encourage the patient to interpret his work. This interpretation by the patient can be as great a value for the physician as the patient's work as such. He may give the physician quite an access to his dynamical and emotional state when interpreting his artistic work.

Patients, working in the art department can be divided in two main groups: those who are chiefly **reproductive** in their work and those who are **productive**. The latter group is smaller and naturally most interesting. Before I characterize those two groups, it seems to be advisable to give a short description of the organization of the art department of the Delaware State Hospital.

There are two large rooms, one for the male, the other for the female patients. Each room is furnished like a studio. Classes of 10 to 15 patients are working at one time. The patient has an entirely free choice of

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what he likes to do. Colored pencils, water colors, oil colors and canvas are at his disposal. If he prefers pottery work, he will find all the necessary material. As said before there are productive and reproductive patients. The former ones are left alone, they do not care for instructions or guidance but want to work on their own. The latter ones are told to pick out pictures in magazines or books, a great number of which is displayed in the art department, and to copy them in whatever form they like to do so. Or they may do pottery work such as vases, cups, ash trays, minor sculptures or whatever they would like to form. They are discreetly supervised and advised by the artists in charge.

One might be inclined to believe that a patient whose work is merely reproductive, who for instance is just copying a picture, does not give the physician much chance for interpretation and evaluation. But such an assumption would be entirely wrong for the majority of the cases. There are several questions which have to come up at once: why did this particular patient choose this particular subject in order to copy it? Does he merely copy it or does he change some features and how does he change them? How does he use colors when copying and coloring a black and white sketch? These are questions which indicate clearly that even the "reproductive" patient is quite productive. Thus it becomes evident that the number of patients who work in the art department, and give the physician an opportunity for a highly evaluable interpretation, is quite large.

It can not be the purpose of this presentation to deal with the great question of the relationship of art or rather artistic features and psychopathology. A great deal of literature exists in this field and many ways of looking at this problem have been developed. Psychology and philosophy have taken the greatest interest in this problem as to a general approach. Psycho-analysis tries to solve the problem in a very specific manner. Experimental psychology succeeded in establishing several objective facts. Looking over the literature one will find that particularly

much interest has been paid to the art of the Schizophrenic. As interpretation naturally is based upon a great deal of subjectivism, it has been tried to establish more objective methods. Schube and Cowell published results obtained by applying the "Restraint-Activity Index" (Archive of Neur. & Psych. April, 1939). This method provides interesting relations for diagnostic considerations.

The following problem, however, exists: does an entirely objective method, by which a patient's creative work can be evaluated according to certain scopes and indices, pay sufficient attention to the very *individual* features? This question must be necessarily answered in the negative. As much as objectivism is desirable, it cannot be considered sufficient, where it is the chief aim to obtain a thorough impression of the patient's dynamical, emotional state. Disadvantages of a subjective interpretation are too obvious to be discussed. But still the advantages might be decisively greater for a deeper evaluation of the patient's individual creative expression.

It is furthermore felt, that the importance of interpretation of creative work lies not so much in obtaining diagnostic data for a certain nosologic entity as for deepening of the insight in the emotional state and getting access to the emotional potentialities. Artistic work of a patient may indicate emotional potentialities, which would not show up by any other means. This fact will even then be of the greatest value, when the diagnosis as such is made beyond every doubt. After all it is not so much the nosologic entity as the individual dynamic state, which attracts the utmost attention of the modern psychiatrist.

Two cases have been selected for this brief presentation, the interpretation of which deals with two extremely different personalities. It is felt that in both cases the application of art-interpretation is of great contributory value for a thorough judgment of the personalities. It must be stressed that an interpretation should not deal with the esthetic or artistic but exclusively with the psychological aspect of the work.

## CASE 1:

The patient is a 58-year-old white woman who according to all available information from different sources was all her life long "a peculiar person." Her father, a farmer, married when she was 12 years old. There was some tension between the stepmother and her and she, therefore, lived with an aunt. Having attended grammar school, she continued in a private school. She left school in order to take care of an uncle's household. At that time, she was 18 years old. It is stated that she had some girl friends from school, but that she at no time participated in social events or cared for boys. The uncle, for whom she worked, was a queer bachelor. She remained there until the uncle's death 12 years later. Information about this period which is somewhat meager, reveals however, that she spent most of her time in the household and showed always a tendency toward seclusion. She became careless in her appearance and was not very clean in her household work. In the presence of other people, the patient seemed "shy and backward, particularly when men were present." She attended regularly the Quaker meetings and, took a rather active interest in the church affairs. As one informant states: "She would arrive each Sunday one hour before time for the meeting to open. During this hour, she would rearrange books of the church library, also take pamphlets from her home, which had no bearing on the religion. She also would distribute the hymnals, but would always get them wrong. When asked why she would always arrive so early for the meeting, she replied she had no clock and never knew the time. Informant saw to it that she got a clock, but patient nevertheless still arrived one hour early."

All informants agree on the fact that the patient's behavior became more strange after the death of the uncle when she joined another uncle's family. Here it happened frequently that she refused to join the members of the family, remaining in her room even for the meals. She would become easily irritable and fly into temper tantrums over nothing. The family provided a house for her in which tenants were allowed to live

also, rent free, that she would not be alone. These tenants give a rather detailed report about patient's behavior at home. They stated that she always used to have talks with herself as if "somebody was in the room with her." She would like to talk about her relations to all Presidents of the United States and she would feel that everybody was a distant relative of hers. She had a small pet dog for nine years and for this whole time the dog has not been outdoors. The patient would always have the dog eat first and then she would eat what was left from the same plate. The patient would become very angry and repeatedly threw things at her roomers. No memory impairment was noted. She had "exaggerated ideas of running the world and would not take any suggestions from any one else." Finally the tenants were afraid to live with her, and they asked for medical consultation to determine her sanity.

*On admission* the patient appeared quite confused. Acoustic and visual hallucinations seemed present. She described "house-boats in the sky, talked of dirigibles which fly about selling motor oil." She showed great lack of interest in her commitment and never spoke of returning home. Abnormal lack of emotion was noted.

*On the ward* patient adjusted well in a short period of time. For the first few weeks she still seemed to have her hallucinations, but was very quiet and co-operative, and became clean and tidy. Progress note states: "She is unobtrusive, friendly in a passive way when spoken to, getting along well with other patients, is a good helper on the ward. Her personality disorganization is only manifested when searching conversation is instituted with her. General physical condition remains good."

This case was presented to the Staff under the diagnosis of "psychosis with cerebral arteriosclerosis." In the staff discussion, however, it was felt that her schizoid nature was too important a factor and too few factors of arteriosclerosis were present to justify such a diagnosis. A final diagnosis was deferred and further observation and study recommended. A few weeks after admis-



sion the patient was sent to the *art department*. She adjusted herself there very well and seemed to enjoy the work. The report of the supervising artist says that she would ask for a picture to copy as she would not be able to do her own design. As soon as her choice was made, she would start to draw slowly and rather methodically. She always seemed to concentrate entirely on her work and would not pay any attention to her surroundings. Once in a while she would ask questions as to how to mix colors, or how to complete a background. When advised she would not follow closely such advise but change things over and over again. She worked very slowly, would work on one drawing several weeks (attending art class 3 and 4 times a week). She began with color pencils, changed after several weeks to oil colors.

On visiting the patient in the art class, one will find her sitting before the canvas working steadily and very quietly. She is always doing minute work at the time, which means that she will work on a rather small area for quite a long time. Being visited and involved in a discussion about her work, she feels pleased and talks very freely about it. Now what is the nature of her creative work? It was said before that she chooses pictures from magazines for copying. What does she choose? A flower girl, a scene with rabbits, a girl spinning, a scene with squirrels. She selects this material from a very large collection of pictures of all types. Now what would the choice of subjects mean in this particular case? Could some factors be found which are common to all selected subjects?

Two general factors can be found. One is *simplicity*, the other is *lack of action*. Simplicity refers to colors and general composition of the selected subjects. A further inspection will reveal, all the scenes are more or less static, they are scenes lacking motion or action. If this patient had selected only one such subject, it would not have revealed anything. But the fact that this patient keeps on selecting such subjects exclusively over a period of several months, must be considered important. With exception of the flower

girl the patient did not accurately copy the originals but changed by adding certain things or changing proportions. It is, therefore, obvious that the patient works actively and from watching her we know that her mind is very much occupied with her paintings. One should not think that simplicity is a factor because the patient wants to avoid technical difficulties. Such assumption would be entirely wrong. A careful study of her pictures, of the rabbit picture in particular, proves her desire and ability to work hard in order to bring out minute details and to improve her technique. Simplicity as a factor must be explained from a more dynamical and psychological angle. It means limitation of imagination and ought to be closely associated with the second factor, which may be called the static one. This patient's emotional state is fixed within certain limits which appear to be rather rigid.

Looking at the flower girl one cannot fail to be impressed by the perfectly dead background which exaggerates the states position of the girl and gives the whole picture a somewhat silent, if not monotonous atmosphere. The girl herself is quite closely copied from the original, whereas the background is the patient's own idea. Here again one should not misinterpret monotony as mere inability. The careful manner in which the girl, her dress, and the flowers are done shows clearly the patient's effort and interest. Exactly the same can be said of the girl spinning. The whole composition is very similar and thus strengthens the impression obtained by analyzing the flower girl picture.

The most recent picture of the patient is the rabbit scene on which patient worked for several weeks. Here again the same characteristic can be found even in a more striking manner. This picture is more or less her own composition. Patient found a black and white sketch showing two rabbits. This sketch aroused her interest and she began to practice drawing rabbits. The supervising artist assured the physician that only a minimum of technical hints had been given to the patient. This picture shows 5 rabbits around a feeding trough. Again the static moment becomes obvious in a most demon-

strative fashion. Instead of showing those rabbits eating, which after all would be most natural, since they are congregated around the trough, only one of them does so, while the remaining four are sitting around like statues. No real relationship can be established between them and thus the picture again impresses one as very monotonous. Again the patient makes an entirely static scene, even where the motive—an act of eating—suggests most strongly action. Simplicity is characterized by the unity of the colors: two rabbits are pinkish, three are white. The background is rather non-contributory.

It becomes obvious from patient's creative work that there is a marked contraction of emotional potentialities and that there is a rather rigid limitation of emotional life. Yet the fact that the patient works methodically and intelligently, that she enjoys her work and is fascinated by it, shows a certain intensity of her emotions.

It is felt that such knowledge contributes worthwhile information to a thorough insight into this patient's emotional state, if one wants to utilize. From a diagnostic point of view, the impressions won by this interpretation, it would strongly stress the schizoid features and would give no evidence at all for a senile syndrome.

#### CASE 2:

This case has been selected for discussion because it presents entirely different aspects. The police picked up a man on the street in Wilmington on the complaint that he was acting in a queer manner. At the time of his arrest he did not know why he was in that particular city nor could he give any address declaring that he travels around the country and has none. Later he explained that he came two days ago to the city in order to paint a background for a photographic studio. He felt very tired and appeared actually weakened. In view of the patient's queer acting on the street and his confused state, he was committed to the Delaware State Hospital.

The admission note states he is coherent, relevant and exceedingly talkative and grandiose. He talks continuously about himself

and the great achievements of the past. He identifies himself as a movie actor and ex-marine colonel. He mentions several members of his family, who are veteran actors, and all are exceedingly prominent people. The patient is euphoric, expansive, is invariably cheerful, smiles easily. He is fully oriented, but memory of the past is so mixed up with his delusions that it is extremely difficult to obtain any chronological account of his activities. Attention is fairly well maintained.

The psychologist reports a Stanford Binet of 123, Vocabulary 152 and comes to the conclusion that "the patient is of very superior intelligence functioning below his level in situations demanding good attentional control and concentration."

The patient adjusts himself immediately. It proves to be difficult to get any reliable information about him as he is a stranger in this city, has no identification papers of value and gives no addresses of friends or relatives. For the time being, he is, therefore, the only informant.

According to patient's own information, the following would be his life history: He had private tutors, when young and also attended numerous colleges such as Harvard, from which he received letters in art and dramatics. He also belonged from his earliest youth to the army and had the title of marine-colonel. He then became a movie star in Hollywood in the days of the silent film and acted as double for such actors as John Barrymore. In fact, he states that he was "like married" to Mary Pickford. After having had a "big clash with Hollywood" in 1924, he left and spent many years on the stage acting and directing. He has been married four times, getting divorced sooner or later. He is also connected with the secret service and was kidnaped twice by foreign agents. He left Washington on a special mission 9 months ago, and was on his way back and happened to stop in this city in order to paint a background as he was badly in need of money. Having finished the job he got drunk and this fact got him mixed up with the police. At the time of his arrest he also was physically very

weak because he had just broken a few athletic records and felt therefore quite tired . . . So for the patient's own story.

A week after admission, the patient was permitted to go to the art department. He felt very enthusiastic about it and has continued to take the greatest interest in it ever since. In fact he works there daily in the morning and afternoon and acts as if it was his studio and he went on the ward just to eat and to sleep. He takes little interest in the activities of the other patients and maintains a superior attitude toward them. He displays artistic abilities in the art department and proves on the occasion of a play given by patients that he must have had excellent coaching and some stage experience. He can recite long passages from Shakespearian plays from memory without hesitation.

The patient is still under observation and no definite diagnosis has been made. The *provisional diagnosis* reads as follows: The first thing that strikes one about this patient is the way he calmly brags about himself. He tells many stories of obviously untrue nature, and does not seem to be at all put out when the absurd nature of the story is pointed out to him. He calmly goes ahead and tells another exaggeration. At times he will admit the absurdities of his stories but will give no explanation of why he continues to tell them. He has admitted that he is an alcoholic but certainly he gives no present proof of an alcoholic psychosis. If anything, he seems to be slightly hypomanic. Apparently he has wandered over the country for years and probably could be classified as a psychopath, a pathological liar, going through a manic phase.

Ever since the patient came to the art class, he has worked entirely for himself. It was obvious that this man was in urgent need of an emotional outlet. The patient would begin a picture in the morning, put it aside and begin another one in the afternoon. It so happens that he always has several pictures at his disposal, on which he can work. The patient is deeply pleased when approached by the physician for thorough discussions of his creative productions. He will proudly

show his pictures and praise them. Critical remarks will irritate him at first, but when one insists on a critical attitude, he will begin to give deeper interpretations.

Now what is the nature of his work? The very first visit will convince one about the great variety of his pictures. There is "The Dying Fool," and "Point Loma, California," "Circus" and "John Barrymore as Hamlet." There is "Nocturne" and "Shylock," "Indian Elephants" and "Music," "The Foreign Legion" and "Camels." There are a few portraits of staff doctors and allegoric pictures such as "Creation of Life" and "Army, Marine and Red Cross." In addition to these pictures, which are all oil paintings, there are several pencil sketches, the nature of which is rather bizarre as they are compositions consisting of symbolic figures, words and numbers.

To begin with the latter ones, patient calls them sarcastically "spasms," by which he means that they are products of a "mental spasm." They refer symbolically to occurrences of the past, relate to his stage life and army position. They are more or less vast associations to some main topic.

His main work, however, is represented by oil paintings, the number of which is rapidly growing. In order to bring a certain order into the variety of subjects, one may differentiate between such dealing with the *theatrical milieu* (The Dying Fool, Masquerade, Circus, Hamlet, Shylock) and other groups dealing with the *exotic world* (Indian Elephants, Camels, The Foreign Legion, and many others) and finally a *lyric-romantic* group (Nocturne, Music).

If one again looks for a common characteristic of all these pictures, then it is a *very active imaginary force*. All these subjects are dealing with another world, either the world of the stage or exotic countries or other strange surroundings. Thus, and this is considered very important, one gets access to the content of patient's imaginary world, and can establish a better basis to understand his grandiose, phantastical talk.

It is, therefore, not surprising that the patient's weakest and obviously rather neglected pictures are portraits and copies.



Here he is bound to a certain real object which excludes almost entirely his imagination. In order to see how far he would be willing to stick to a real given object, it was suggested to him to do a self-portrait. Another reason for this suggestion was to observe how realistic the patient could see his own present state. The result was this: A young man standing on the seashore, naval units in the background. This portrait can be taken as proof that he must get away from reality as such and that grandiose ideas as relating himself to the navy (as in this picture) are expressions of a deep seated mechanism.

Very interesting observations were made, when he worked on "Nocturne" and "Music." Both pictures are similar in the general composition. The foreground is a stage like frame in which in one a man in a gondoliere playing a mandolin, in the other a nude woman lying against a little wall, is shown. The background is a little lake with swans, phantastical trees, and less concrete features, done in blue, gold, red and various other glittering colors. He explained that this was a symphony of colors, that he actually "plays" on the canvas as a musician on an instrument, his colors being the tones. These pictures mark very distinctly the great activity of his imagination.

By no means should imaginary force be considered identical with delusional state. His pictures with exception of the allegorical sketches prove rather definitely that as expansive as his grandiose ideas might be, the concept of the pictures is based upon realities. Definite proof can be obtained concerning his stage experience as well as his knowledge of other parts of the world. His pictures (Hamlet, Shylock, The Dying Fool, and others) show that he is familiar with the stage scenery and costumes.

Very characteristic for all pictures is, furthermore, the fact that he is always more interested in bringing out the general atmosphere than things themselves.

He paints an old triumphal arch, puts two soldiers riding camels in the foreground, and calls it "The Foreign Legion." In other words, he has such general associations to

foreign legion as African soil characterized by the triumphal arch and camel riding soldiers and that is already enough to name the whole thing, "The Foreign Legion." In "Indian Elephants" he is so anxious to bring out the general impression of the gigantic elephants that he makes mistakes in proportions and overdoes the legs. The same happens in "The Dying Fool," where the sharply bent, rhythmic figure of the fool is entirely out of proportions as the legs have about twice the size as the body with head has. He succeeds, thus, however, in creating a somewhat dramatic atmosphere.

All his creations display very markedly motion, rhythm and action. This can be studied in a picture like "Masquerade." One sees the sensuous face of a Coquette framed in a white mantilla and over her left shoulder the head of a French courtier (according to patient's interpretation) of demonic and lustful appearance. The whole conception is in terms of action, and every part of the picture displays motion and rhythm. This picture is also very interesting because it is a direct expression of the patient's erotic state. On the ward, during the time he worked on this picture, his use of language rather obscene in character, was particularly marked. The erotic trend in this picture is very obvious, and it is interesting that he expresses it in this theatrical make-up.

Much more indeed could be said and derived from further analysis of other pictures but it requires more space than available for this brief presentation. In summarizing the observations concerning this patient's creative work, this much can be said:

It displays a vast activity and great imaginary force. There is always action and rhythm noticed in patient's way of composing. Not concentration on and completion of a subject, but merely an expression of the general features that creates the atmosphere of the subjects such as characterizes all his compositions. It is the world of the stage and the exotic world, which attracts the patient's mind the most. His work gives vivid evidence for the extremely exaggerated activity of his phantasy.

It is felt that the patient's artistic creations gave an opportunity to achieve access into his inner emotional state. This is the more important, as thus one recognizes certain well defined forms of it, whereas it otherwise was entirely amorphous. The final classification of his mental pathology may remain pseudologia phantastica, but the deeper emotional structures have been recognized and have deepened the insight into his inner life.

### Summary

(1) The art department provides for the physician an opportunity of an important approach to the patient's emotional state.

(2) A direct and unspecific interpretation is held necessary in order to evaluate to the utmost the individual features presented by the patient.

(3) It is the chief aim to deepen the insight into patient's emotional state rather than to obtain diagnostic data.

(4) Two cases have been presented for demonstration of such interpretation.

### SULFANILIMIDE—LOCAL APPLICATION IN DENTISTRY

WILLIAM H. NORRIS, D.D.S., and J. ALLEN WIENER, D.D.S., and IRVING L. YALISOVE, D.D.S.\*

Wilmington, Del. and Farnhurst, Del.

Sulfanilimide has been used with marked success in medicine. There has been much literature written about it in all its phases of administration. This paper will deal solely with its local action in the oral cavity and an attempt will be made to prove its worth by the results of many cases in which it was used against a control of similar cases in which it was not used. Upon local application, it has eliminated much post-operative pain, kept edema to a minimum, eliminated entirely post-operative infection, (systemically and locally) prevented "dry-socket" and has been a valuable aid in root canal therapy.

Why and how sulfanilimide produces these results is still a scientific problem, and many men still doubt the benefits of the local action of this drug. "The results would have been just as good without sulfanilimide" is a fa-

miliar statement of the skeptical. However, at the Delaware State Hospital it has been used with marked success.

Sulfanilimide may be used locally or systemically. The systemic use of the drug in severe oral infections has proven very successful, and has eliminated, in many cases, surgical measures, which would have resulted in disfiguring scar about the head and neck.

However, at the Delaware State Hospital, the local use of the drug eliminated the necessity of its use internally.

The cases selected were of the varieties that have previously, without the use of sulfanilimide, shown a poor prognosis, accompanied with severe post-operative pain, trismus, edema and systemic complications.

The test was applied to cases after the removal of teeth that showed extensive apical infection and after the removal of infected impacted teeth, by means of chisel and mallet which produced operative trauma.

### MODE OF APPLICATION

After removal of the tooth or growth, care was taken to isolate the operative area from oral fluids. The alveolar socket was bathed with tincture of metaphen, which acted as a powerful germicide, to check strains of bacteria other than streptococcus. Then crushed particles of sulfanilimide were packed gently into the cavity, until it was filled. A suture was used where it was indicated. Where a suture was not needed the cavity was protected by a small packing of iodoform gauze. The patient was advised not to drink any fluids or rinse mouth for a period of six hours. This measure prevented the washing out of the particles of sulfanilimide.

The patient was kept under close observation until healing was completed.

### CASE HISTORIES

#### Case I. J. C.

12-5-39. Vitalized, lower right first bicuspid showing large radiolucent area. Was extracted and the sulfanilimide treatment was administered immediately.

12-6-39. No post-operative pain, no edema.

12-8-39. Pain still absent, healing rapidly.

12-11-39. Socket nearly closed.

#### Case II. C. J.

12-12-39. Impacted lower left third molar

(Continued on Page 133)

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# EDITORIAL

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It is felt that the patient's artistic creations gave an opportunity to achieve access into his inner emotional state. This is the more important, as thus one recognizes certain well defined forms of it, whereas it otherwise was entirely amorphous. The final classification of his mental pathology may remain pseudologia phantastica, but the deeper emotional structures have been recognized and have deepened the insight into his inner life.

### Summary

(1) The art department provides for the physician an opportunity of an important approach to the patient's emotional state.

(2) A direct and unspecific interpretation is held necessary in order to evaluate to the utmost the individual features presented by the patient.

(3) It is the chief aim to deepen the insight into patient's emotional state rather than to obtain diagnostic data.

(4) Two cases have been presented for demonstration of such interpretation.

### SULFANILIMIDE—LOCAL APPLICATION IN DENTISTRY

WILLIAM H. NORRIS, D.D.S., and J. ALLEN WIENER, D.D.S., and IRVING L. YALISOVE, D.D.S.\*

Wilmington, Del. and Farnhurst, Del.

Sulfanilimide has been used with marked success in medicine. There has been much literature written about it in all its phases of administration. This paper will deal solely with its local action in the oral cavity and an attempt will be made to prove its worth by the results of many cases in which it was used against a control of similar cases in which it was not used. Upon local application, it has eliminated much post-operative pain, kept edema to a minimum, eliminated entirely post-operative infection, (systemically and locally) prevented "dry-socket" and has been a valuable aid in root canal therapy.

Why and how sulfanilimide produces these results is still a scientific problem, and many men still doubt the benefits of the local action of this drug. "The results would have been just as good without sulfanilimide" is a fa-

miliar statement of the skeptical. However, at the Delaware State Hospital it has been used with marked success.

Sulfanilimide may be used locally or systemically. The systemic use of the drug in severe oral infections has proven very successful, and has eliminated, in many cases, surgical measures, which would have resulted in disfiguring scar about the head and neck.

However, at the Delaware State Hospital, the local use of the drug eliminated the necessity of its use internally.

The cases selected were of the varieties that have previously, without the use of sulfanilimide, shown a poor prognosis, accompanied with severe post-operative pain, trismus, edema and systemic complications.

The test was applied to cases after the removal of teeth that showed extensive apical infection and after the removal of infected impacted teeth, by means of chisel and mallet which produced operative trauma.

### MODE OF APPLICATION

After removal of the tooth or growth, care was taken to isolate the operative area from oral fluids. The alveolar socket was bathed with tincture of metaphen, which acted as a powerful germicide, to check strains of bacteria other than streptococcus. Then crushed particles of sulfanilimide were packed gently into the cavity, until it was filled. A suture was used where it was indicated. Where a suture was not needed the cavity was protected by a small packing of iodoform gauze. The patient was advised not to drink any fluids or rinse mouth for a period of six hours. This measure prevented the washing out of the particles of sulfanilimide.

The patient was kept under close observation until healing was completed.

### CASE HISTORIES

#### Case I. J. C.

12-5-39. Devitalized, lower right first bicuspid showing large radiolucent area. Was extracted and the sulfanilimide treatment was administered immediately.

12-6-39. No post-operative pain, no edema.

12-8-39. Pain still absent, healing rapidly.

12-11-39. Socket nearly closed.

#### Case II. C. J.

12-12-39. Impacted lower left third molar

(Continued on Page 133)

\*Visiting Dentist and Dental Internes, Delaware State Hospital.

# EDITORIAL

## DELAWARE STATE MEDICAL JOURNAL

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## RORSCHACH PERFORMANCES OF ALCOHOLIC PATIENTS

JOSEPH JASTAK, Ph. D.\*

Farnhurst, Del.

The Rorschach test consists of five achromatic and five colored ink blots into which the examined person reads some meaning by describing what they represent. The test is hailed by those expert in its interpretation as one of the best methods for the individual study of the human personality. Its advantages over other clinical techniques are several. Beyond the general request to tell what the ink blot might be, the patient is left entirely to his own devices. This freedom from restrictive directions and set procedures is said to reveal the basic mental makeup more readily than the prescribed routine of the so-called intelligence tests. The Rorschach test is more objective than the general interview and more subjective than the psychometric examination. It reveals several factors of the patient's personality—his intelligence, his emotional reactivity, his temperamental qualities, his spontaneity and control, and his state of sanity. Within these factors it is said to differentiate between native capacity and functional efficiency; between rational and impulsive adjustments to the environment; between crude and refined control; between extroversion and introversion; and possibly between the various forms and degrees of abnormal mental states. The Rorschach method sponsors no definite theory of personality, but studies the effects of several general aspects of the personality structure by reference to the intra-individual relationships of the test factors which make up the results of the experiment. The significance of each Rorschach factor depends more on the test pattern as a whole than on its absolute numerical value. To give a concrete example from psychometrics, the prognostic value of either good verbal or good manual abilities as such is considerably smaller than are predictions based on the relationships of the two abilities. Identical Stanford quotients in two individuals may mean totally

different things, depending on the constellation of several additional quotients. To those who have trained themselves to use the intra-individual patterns of psychometric tests for purposes of personality study, the chief difference between the Rorschach and the psychometric methods is largely one of historical background. It is therefore far less fundamental than many believe it to be. The Rorschach test was developed by a clinician for strictly individual personality diagnosis. Its chief medium is and must be the intra-individual response pattern. The psychometric test, being a mass production of statisticians, places a premium on ambiguous averages for inter-individual comparisons. The ideal clinical test should give equal consideration to both phases of the problem. The Rorschach test is obviously weak in its inter-individual interpretations, while the standardized psychometric test ignores the intra-individual relationships. As soon as the shortcomings of both types of test are alleviated they may be found to be measuring practically the same thing. Everything a human being does reveals his total personality. The correctness of this important assumption permits the Rorschach expert to make seemingly exaggerated claims for the ink blot technique. The absence of this assumption reduces and often nullifies the diagnostic worth of so-called intelligence tests. If the truly psychological issues of clinical testing are kept in the foreground and the statistics are subordinated to these issues, there need be no fear of the standardization or validation of any clinical procedure. Statistical reasoning replaces psychological insight only when unnecessary assumptions are made or certain imperative assumptions are ignored. The Rorschach movement has, to some extent, avoided both pitfalls.

The object of this study is the analysis of the Rorschach performances of ten patients with long histories of alcoholism and vocational maladjustments. Our main concern is, of course, with the possible discovery of personality factors which may, to some extent, explain the patient's persistent refuge

\*Chief Psychologist, Mental Hygiene Clinic, Delaware State Hospital.



in alcoholism. The determinants of the Rorschach responses are listed in Table I.

TABLE I. DETERMINANTS OF RESPONSE

Pt.	Age	Resp.	No Movement	Form	Color						
			M MF m	k K F	Fc c C'	FC CF C					
1.	31	10	1 1 —	— 1 5	— 1 1	— — —	—	—	—	—	—
2.	44	9	— 1 —	— 1 7	— — —	— — —	—	—	—	—	—
3.	37	33	3 1 —	— 26	3 — —	— — —	—	—	—	—	—
4.	44	11	1 — —	— 5	— 2 —	— — —	—	—	—	—	—
5.	43	11	2 — —	— 1 3	1 1 1	— 2 —	—	—	—	—	—
6.	52	15	— 4 —	— 7	1 1 —	— 1 —	—	—	—	—	—
7.	48	20	1 1 1	— 1 8	2 1 —	— 2 3	—	—	—	—	—
8.	30	9	1 — —	— 6	1 — —	— — —	—	—	—	—	—
9.	41	14	1 — —	— 8	2 — 1	— — 1	—	—	—	—	—
10.	36	10	1 2 —	— 3	— 1 1	— — —	—	—	—	—	—

Five of the ten patients (1, 4, 5, 7, 10) had, as far as could be determined, never been psychotic. Three (2, 3, 9) suffered from alcoholic psychosis and acute hallucinosis at the time of their admission to the hospital. One (6) was diagnosed as paranoid condition with alcoholism a factor, and one (8) was readmitted because of alcoholism, but previously diagnosed as suffering from psychoneurosis, reactive depression (in chronic alcoholic). All those who were diagnosed as psychotic, had been free from psychotic symptoms for at least six months previous to the Rorschach administration. Eight of the ten patients had ground parole and working privileges, but were otherwise kept under hospital supervision for therapeutic purposes. Their occupations outside of the hospital were painter, textile dryer, plumber, seaman, machinist, mechanic, boatman, electrician, truck driver, and salesman respectively.

An inspection of Table I reveals that the total number of responses is strikingly small. Ninety per cent have fewer than 25 responses, 35 being the average for normal adults of average intelligence. It may be mentioned that the test was a painful experience to all patients without exception. Inability or unwillingness to commit themselves, lack of ambition and directness, and absence of good fluent associations were conspicuous in all records. Most of our patients were aware of their limitations and expressed them unambiguously in numerous spontaneous remarks. "I'm afraid I have to pass; I'm rather dull; I hate like hell to say it—a pair of small birds; perhaps I lack imagination; doesn't look like a damn thing; I am not much in games, never played much; I think I can't make out anything much; I

don't catch any significance; there isn't much here to go on; never seen anything like it before; pretty hard to guess what that could be; could be almost anything; nothing I have seen; the whole thing doesn't mean anything to me; I don't see much there; I hardly know how to answer it; I don't know what it might be; don't know what you would call it; I don't know much about that; God knows, nothing of life in there."

The main determinants of a Rorschach record are movement, form, and color. Movement responses inform us about the patient's state of inner life. Color responses reflect his contact with the outside world. Form responses indicate an impersonal mode of action which is resorted to for protection against the environment or against one's own instinctual drives. None of these categories has absolute significance, but must be considered in the light of the remaining factors.

From the small number of M responses we might conclude that most of our patients have an undeveloped inner life. No matter what their native endowment is, they do not apply their capacities to effect a real appreciation of what goes on about them or a dependable control of their intellectual functions. They remain on an essentially immature level of functioning. Their W to M ratios (Table III) indicate a definite inability to use their mental powers for productive ends. Only one patient (3) is an exception to this and to practically everything we might say about the group as a whole. This does not mean, of course, that his record is a normal one. The last three columns of Table I enlighten us about the patient's contacts with the outside world. The first three patients seem to have found a defense against the environment in the refusal to notice it at all. They wield control over their attitude toward themselves and toward external stimuli by being passive and neutral. The remaining seven patients show some responsiveness to the environment, but they are more likely to be unthinking and impulsive than rational in their adjustments to it. This is evidenced by the prevalence of CF and C responses over FC. In normal individuals the FC factor

is usually stronger than the CF and C components.

	W	D	d	Dd	S	Rejected
1.	50	40	—	10	—	1 (10)
2.	22	67	11	—	—	2 (7.9)
3.	12	58	6	24	—	—
4.	73	9	9	—	9	—
5.	82	18	—	—	—	—
6.	27	60	—	13	—	—
7.	55	45	—	—	—	—
8.	45	33	—	22	—	1 (9)
9.	29	43	21	7	—	1 (9)
10.	80	20	—	—	—	1 (4)

W—Whole blot; D—large detail; d—small detail; Dd—rare, unusual detail; S—white space.

Only one patient (9) has a more or less normal distribution of the ink blot portions chosen for interpretation. Six show a preference for whole card responses. It may be emphasized here that practically all such whole blot responses are vague, crude, and non-committal. There is not one truly combinatorial, all-inclusive analysis of the whole ink blot in any of the ten records. This may indicate that some of them possess capacities for higher mental functions, but that their use is restricted or distorted by lack of proper integrations. Wherever the W is overemphasized, the larger and more obvious portions of the blot (D's) are understressed in the response pattern. This would point to a lack of common sense and to a deficiency in the evaluation of obvious facts of daily life. Four of our patients appear to emphasize unusual details either at the expense of the whole blot or of large details.

TABLE III. RELATION OF RESPONSES  
Percentage of Responses

Patient	W:M	Animal	Popular	Original	To Cards 8, 9, 10	McSum C	(MF + m): (Fc + c + C)
1.	5:1	50	40	0	30	1:0	1:2
2.	2:0	33	22	0	33	0:0	0:0
3.	4:3	67	15	0	33	3:0	1:3
4.	8:1	45	36	0	36	1:3.5	0:2
5.	9:2	9	27	0	27	2:2	0:3
6.	4:0	47	20	6	47	0:1.5	4:2
7.	11:1	35	25	0	40	1:4	2:3
8.	4:1	45	45	0	22	1:1	0:1
9.	4:1	29	21	0	29	1:2.5	0:3
10.	8:1	30	50	0	30	1:3	2:2

The last three columns of Table III contain data suggestive of the Erlebnistypus of our patients. It might be inferred that two patients (6,7) show marked extroversial trends; three patients (5, 8, 9) show definite withdrawal tendencies; while the remaining five are more or less ambi-equal. From their psychiatric records one would gain the impression that all our patients are inclined to-

ward extroversion, except perhaps one (8) who shows distinct withdrawal tendencies in critical situations. The percentage of animal responses seems, on the whole, normal. Stereotyped behavior is probably not an outstanding characteristic of the group. Popular responses are common in all ten records. They seem to predominate in those patients who select the whole ink blot (W) for interpretation. Those who overemphasize the D response have considerably fewer popular responses. The almost total absence of original responses agrees with other findings of the Rorschach study concerning their lack of productive and creative abilities.

No attempt was made to judge the patients' intelligence from the Rorschach records as this was already known from rather comprehensive psychometric examinations. Their native endowment as well as functional efficiency had previously been determined from psychometric results. They were all found to be suffering from marked mental dysfunctioning which fact closely agrees with the findings of the Rorschach study. It happens that five of the ten patients had previously been diagnosed as superior (I. Q.'s 130-154) and five as average (I. Q.'s 92-103) in native capacity. It seems that neither the quality and number of whole-blot or human movement responses, nor the quality of form responses, nor the number of original responses, nor the succession of responses yield a reliable difference between the superior and average group. It is hardly possible to separate the superior from the average individuals from the determinants, the location, the ratios, and the variety of content without studying such phases of the Rorschach performance as the degree of abstractions, the mode of verbal expression, and the apperceptive background contained in the spontaneous productions. Here are some examples from which the patient's intelligence may be guessed at and which do not significantly influence the factors listed in the tables. "Iberian peninsula; floral formation; botanical name is Lemon Lilly; general contour; ears would be collapsed; it's decapitated; gnome-like figures; crustacean water squawk; priest's regalia; dilapidated

outfit; caricature of the crown prince of Germany; flying mammal; aquatic ornament; marine vegetation; fantastic profile; abscessed and diseased tooth; broad-wing bat."

At least three such concepts occur in each one of the records of the superior patients. None occur in the records of patients with only average intelligence.

There are other qualitative points of a symbolic significance which can be gleaned only from a direct perusal of the original records. One patient saw deteriorated, dilapidated, rotten, and destroyed objects and animals in five of the ten cards. Another one saw piles of rocks in more than half of the cards. The latter response was, however, superficial and stereotyped, and served as a survival mechanism in the absence of normal ideation.

Florence Miale, in a paper read at the annual meeting of the Eastern Psychological Association in April, 1940, lists nine signs differentiating the Rorschach records of normals from those of psychoneurotics. According to Miale the presence of five or more such signs in any record strongly suggests the presence of psychoneurosis. Table IV permits a comparison of Miale's normals and psychoneurotics with our group of alcoholic patients.

TABLE IV.

Sign	Normals Neurotics Our Group		
	(20)	(43)	(10)
1. Not more than 25 responses	30%	93%	90%
2. Not more than one M	0	74	80
3. FM greater than M	15	67	80 (30)*
4. Color Shock	20	98	90
5. Shading Shock	20	81	70
6. Refusal of any card	0	47	50
7. F% greater than 50	20	51	40
8. Animal % greater than 50	25	58	10
9. Not more than one FC	20	81	90

\* 30% FM's in spontaneous performance and 50% in the inquiry. According to Klopfer FM's obtained during the inquiry should be scored as additional determinants.

As is evident our group of alcoholic and non-psychotic patients closely resembles Miale's group of psychoneurotics insofar as the presence of unfavorable Rorschach signs is concerned. The only significant difference is in the percentage of animal responses which is much smaller in alcoholics than in neurotics. The average number of signs for our group is 6, for the neurotics 6.5, for nor-

mals 1.5. The respective ranges are 3 to 9, 4 to 8, 0-3.

If Miale's assertion concerning psychoneurotic Rorschach signs is accepted at its face value, 8 out of our 10 patients would be neurotic. Yet protracted psychiatric study of these men failed to reveal neurotic traits in all except one case. Klopfer, discussing the value of cumulative signs of dementia praecox, justly warns against the quantitative use of abnormal Rorschach signs for differential diagnosis. It seems that the same unfavorable Rorschach signs appear in records of patients suffering from different personality defects.

The only clearcut inference we can make from this study is that none of our patients has a normal Rorschach record. Whether their abnormalities are inherent or a result of alcoholism is difficult to determine. The most plausible conclusion is that both factors are interdependent at this stage of their lives. Further comparative control experiments seem indicated.

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## MULTIPLE TESTING IN CLINICAL PRACTICE

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The role of psychological tests in a clinical situation has been made clear again and again in psychological literature. The testing movement has grown progressively more active in the thirty odd years since its inception and has penetrated in many places. Schools, courts, and institutions for the feeble-minded or for the insane usually employ one or more persons primarily for the purpose of "mental testing." At the same time, changes in interpretation of the test findings have also taken place and it is with this changing interpretation that clinicians are now concerned.

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The original program posited ability to measure intelligence and intelligence only. The Binet-Simon Test, the ancestor of the present Stanford-Binet Scale, was devised primarily to select the children who were unable to meet classroom requirements because of "alleged" low intelligence. Binet began the work by asking questions of children of known chronological age, and those questions which discriminated children of one age group from those of another were included in the test. Each test was thus given an age value. Children of eight years who could pass the tests which had an age value of eight were conceded to have average intelligence.

This type of test, the age-scale, became very popular and was frequently revised to meet the needs of the purpose and locality for which it was to be used. In order to make possible the comparison of intellectual ability between children of different ages, the intelligence quotient, the ratio between actual age and mental age, was devised.

The name intelligence quotient in itself implied that the rating obtained was a measure of intelligence. The test items used to give any rating were heterogeneous in nature, however, so that the age-rating and quotient thus obtained were actually averages of a variety of sub-ratings indicating the child's successful completion of a number of dissimilar tasks. For many years this was the only test available, and as a result, even though many more tests have been devised, the Stanford test is still the nucleus about which most testing programs have been built.

The number of tests now available for use in determining mental ability is legion, and the standardization of them and their purposes are varied. With all the materials now procurable, it becomes more and more necessary that the widely different test findings be organized into some useful and integrated whole, conducive to practical and rational interpretation. Much of the argument among psychologists relative to the variable results of test findings can be eliminated by an interpretation which takes into account the analyzable components of differ-

ent tests as well as a synthesis of all the tests used.

In working out such an analysis, the most important thing to bear in mind is that intelligence is by no means the only human attribute which comes into play during the test situation. In a recent book, Wheeler has made the following statement concerning the measurement of intelligence by tests. "A real intelligence test is measuring an individual's will as much as his reasoning, his emotional life as much as his judgment. It is measuring the organization of his 'forces' toward achievement, and the achievement is an expression of derived potentials. The achievement, however, and not the potential is being measured." If this is true, and clinicians are generally agreed that it is, the manifestations of ability may vary in many ways and the potentialities and real intelligence level of a person are derived by inference and not directly. Many sources of error and many non-intellectual factors enter into the situation and only by careful analysis can the effect of the extraneous factors on the final rating be determined. Thus, poor cultural background may lower a patient's achievement in certain verbal spheres, educational neglect may affect test items in which reading is required; a psychosis will always influence items wherein good mental control and concentration are necessary. It is quite obvious, then, that an intelligence quotient, the average of ratings on many diverse tests, is only as valid as the individual ratings themselves.

In clinical practice in the past, it was the custom to look upon the Stanford-Binet quotient as the only accurate and acceptable measure of intelligence. Results from other tests thus tended to be minimized and due to the heterogeneous nature of the items on the Stanford test, many false diagnoses of intelligence level were made, and because only the synthetic quotient was used for determination of ability, much illuminating information which could be uncovered by a judicious analysis of test failures and successes, was overlooked. The most that was done was to take into account the "scatter," that is, the range covered by test success. While scat-

ter is, of course, important in the sense that the greater the scatter the less likely is the quotient to be an accurate measure of the real mental level of the patient, scatter itself may be of various types. An individual who fails all tests demanding verbal comprehension and expression may be quite as intelligent as a person who fails all memory tests, and yet have a lower quotient merely because there are more opportunities for verbal successes than for successes on memory tasks. The type of material from which any test of intelligence is composed, coupled with the general type of mental functioning in which a patient expresses himself best or worst determines the quotient. A person who expresses himself inadequately in verbal media makes a poor showing on verbal tests, but unless some other difficulty is present, may do very well on non-verbal tests. Must we then say he is a moron on the Stanford-Binet and a genius on the performance test? Yet this is what has been done many times, and in many places is still the most common solution offered to the problem of discrepancy. What can one say about a person, then, whose test scores are widely disparate? There are, of course, various interpretations, but one thing is certain, no person can be less intelligent than the highest reliable quotient indicates, no matter from what test the quotient has been derived.

One of the problems facing the psychologist is what test will give the most valid measure of intelligence; what test is least likely to be influenced by all other environmental and personality factors which are known to affect ratings? If a single test which could always be relied upon to give a valid rating in every situation were obtainable, the time spent in determining levels of intelligence would be greatly decreased and the whole problem of interpretation greatly simplified. Unfortunately there is no single test which satisfies this demand in every instance.

When a child comes into the clinic, the examiner has no reliable way of predicting what ratings may be obtained on the various tests which will be administered, although

the social history sometimes gives cues of various sorts so that an experienced psychologist may hazard a guess which will later prove to be correct. However, the possibilities of combinations are infinite and many surprises occur when a sufficiently broad program of testing is used. The value of the tests, nevertheless, is not so much in present findings as in their predictive worth.

Recently there has been much controversy in regard to the constancy of the I. Q., and in this controversy it is always the Stanford-Binet I. Q. to which investigators refer. The psychologist who relies on a Stanford-Binet result alone for prediction is certain to have a large source of error merely because the test itself is composed of so much unintegrated material, and is heavily weighted with performance items at the lower levels, and with verbal items at the upper levels. Unless some method of measuring the patient's relative proficiency in these spheres is available, no prediction can be made as to future ratings, or as to actual intelligence level. Although Wheeler boldly asserts in his review of performance tests that the Cornell-Coxe test is, alone, not an adequate measure of intelligence, events in the Mental Hygiene Clinic have shown that for some cases, it is the most adequate measure of intelligence. It is to be regretted that performance tests are generally not used as often as desirable by clinical psychologists.

To combat the difficulties in interpretation attendant to using only a single test, and to plug up holes and eliminate as many sources of error as possible, it has been the custom of the Psychology Department of the Mental Hygiene Clinic to administer routinely not fewer than three tests, including a vocabulary test, the Stanford-Binet test, and a performance test appropriate to the age of the person being tested. The relative value of each of these tests as the most accurate index of intelligence is shown by the following table. All the cases referred by the Juvenile Court, the Mothers Pension Commission, the Children's Bureau, all applicants for attendant's positions at the Delaware State Hospital and for nurses training courses, and all Delaware State

Hospital patients seen during the year from July 1, 1937 to June 30, 1938 were tabulated and in each instance the test on which the patient obtained the highest rating was noted. The results show significant differences between the groups, and significant differences between test value within the groups.

	Performance Highest	Stanford Highest	Vocabulary Highest
<b>JUVENILE COURT</b>			
Number of Cases .....	86	22	25
Percent of Cases .....	60.5%	15.5%	17.6%
<b>CHILDREN'S BUREAU</b>			
Number of Cases .....	5	3	2
Percent of Cases .....	45.5%	27.3%	18.2%
<b>MOTHER'S PENSION</b>			
Number of Cases .....	11	3	—
Percent of Cases .....	68.7%	8.7%	—
<b>APPLICANTS</b>			
Number of Cases .....	15	18	40
Percent of Cases .....	19.5%	23.4%	51.9%
<b>TOTAL OF ABOVE (Non-Psychotic)</b>			
Number of Cases .....	117	46	67
Percent of Cases .....	47.6%	18.7%	27.23%
<b>DELAWARE STATE HOSPITAL</b>			
Number of Cases .....	15	15	196
Percent of Cases .....	6.6%	6.6%	83.9%

The most outstanding fact which can be readily seen is that for no group does the Stanford-Binet Test prove to be the most adequate measure of intelligence in the largest proportion of cases, although in at least one instance either of the other tests does rank highest.

It is hoped that the value of multiple testing has been made apparent by this discussion. It is often remarked that the administration of the full test battery is time consuming and the presentation of so many disparate quotients is confusing. However, these disadvantages are entirely offset by the greater scope for analysis and understanding of personality factors which are measured along with intelligence, greater accuracy of determining intelligence level, and higher predictive value from patterns than from single quotients. None of these advantages are obtainable when one must rely on the "synthetic quotient" obtained on a single test.

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## VARIABILITY OF STATE HOSPITAL PATIENTS ON THE ARMY PERFORMANCE SCALE

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In the psychometric examination of State Hospital patients one of the primary considerations is to discover the discrepancies between the potential and present functional levels of the patient and the cause of these differences. In order to do this we must measure as many abilities as possible, which means that no single test or scale is sufficient. Certain factors may modify one score while leaving others untouched. Consequently, a battery of four tests, measuring as many phases of ability, is employed. It includes the vocabulary test, the Stanford-Binet Scale, the Army Performance Scale, and a reversed digit-memory series. While all of these tests are important in constructing a complete picture of the patient, we will concern ourselves, here, with the contributions of the Army Performance Scale.

The Army Performance Scale is made up of seven sub-tests, each rated according to a standardized key and receiving a weighted score corresponding to a mental age. The mental age divided by the chronological age gives the intelligence quotient or I. Q. A brief description of the seven items follows:

1. The Ship Test: a picture of a ship divided into ten pieces to be placed in correct order in a frame provided for the purpose.

2. (a) Manikin: a small manikin in six parts to be assembled.

(b) Profile: a profile in eight parts to be assembled.

3. Knox Cubes: five cubes, four of which are placed before the patient to be tapped with the fifth by the examiner in a series of combinations and imitated by the patient.

4. Cube Construction: three sets of blocks partly painted and partly unpainted to be assembled according to models.

5. Memory for Designs: Four cards on which are drawings, each of which is to be reconstructed from memory after a ten second presentation period.

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6. Porteus Mazes: Paper mazes for years X, XI, XII, and XIV of the Porteus set to be scored for both speed and accuracy.

7. Healy Picture Completion II: A series of ten pictures with a small part missing from each, to be completed by the insertion of small blocks bearing pictures of the missing parts.

Each patient in the study was given all seven items of the scale. Of the 153 subjects, 85 received a psychiatric diagnosis of manic depressive psychosis and 68 were diagnosed dementia praecox. The patients in each of these two main categories have been further classified into three groups on the basis of the highest rating in the battery as follows:

1. Those whose highest I. Q. fell in the range from 115 up.
2. Those whose highest I. Q. fell in the range between 85-114.
3. Those whose highest I. Q. fell in the range from 84 down.

For purposes of convenience these will be known as the high, average, and low groups, respectively, in the discussion.

Intra-scale scores reveal interesting discrepancies which take on added significance when we note how consistently they occur and what relationship they form with the complete pattern. It is these discrepancies which form the basis for this study.

In the following table a typical case from the five intelligence groups, namely, superior, average, dull normal, borderline, and defective, has been included. The score for each of the items of the Army Performance Scale as listed in the table represents the I. Q. for the entire scale if every item were performed at that level. These figures cannot legitimately be used except as a basis for the comparison of intra-scale variability. Since the variability is of primary importance to us the table presents typical cases in each of the two groups rather than averages for the whole group which tend to obscure the discrepancies.

	Dementia Praecox					Manic-Depressive				
	1	2	3	4	5	1	2	3	4	5
Vocabulary .....	127	100	84	72	69	127	99	80	71	62
Stanford Binet ....	111	90	69	70	58	106	94	68	63	54
Digits-Memory .....	84	64	44	47	42	100	84	37	61	37
Army Performance ..	88	69	58	62	45	95	68	59	70	58
Ship .....	103	71	0	61	38	81	64	67	49	58
Manikin - Profile ..	95	77	38	69	38	87	87	53	56	61
Knox Cubes .....	103	87	66	56	62	114	66	56	66	66
Cube Construction ..	67	91	45	45	62	71	61	61	67	71
Designs .....	103	87	67	67	45	118	81	53	71	53
Mazes .....	77	77	45	49	0	77	58	49	0	38
Healy II .....	81	73	53	77	0	131	75	64	61	0

An examination of the above table shows that, regardless of intelligence level the actual performance level on the manual items of the scale is low. This is due to the fact that the motor abilities are effected by mental dysfunctioning before the verbal abilities and it becomes difficult for the patient to integrate his manual expression with his thoughts. He frequently becomes confused and replaces effective planning with ineffective trial-and-error methods. We do find, however, a moderate correlation between intelligence and performance in that the individuals in the higher intelligence groups, while functioning far below their potential level, still maintain a higher degree of efficiency than the lower groups.

In working with the dementia praecox patient the examiner feels cut off from the subject. Questions may receive no response for so long that he will wonder if his instructions have been heard. Instructions may have to be repeated several times. Frequently when the response is finally made it is irrelevant and even, at times, incoherent. The patient appears to be wrapped up in his own thoughts and to harbor a passive resentment for the examiner's attempts to force other thoughts into his consciousness unless the situation presented corresponds with or suggests his own line of thought. Thus small parts of the instructions (and not necessarily important parts) may be assimilated while the bulk of the directions are disregarded entirely. There is little emotional display and the patient rarely becomes upset over errors or failures even when he recognizes them. He rarely works towards a goal and much of his activity is purposeless. He uses trial-and-error methods extensively. Hence time limits prove a handicap. He is frequently distracted by hallucinations. One

patient refuses to do any pencil work because his pencil "keeps changing color." Another prefers to stand throughout the examination period because when he sits on a chair he smells something cooking and it makes him hungry. The paranoid type of individual frequently refuses or resists a certain item because he associates it in some way with his delusions.

In the manic depressive patient the psychologist is confronted with an entirely different type of problem. The patient is in good contact with his surroundings. If he is in a depressed state his responses may be slow and indifferent, yet he responds, in most cases logically although somewhat impulsively. His good contact enables him to be generally more co-operative than the Dementia Praecox patient. In the manic state the patient is active and restless. He is loquacious and frequently over-curious. He tires of a subject quickly and is eager to go on to something new. He makes the transition between test items easily with little tendency towards perseveration. He responds promptly and often impulsively. Emotions are amplified. A mildly humorous situation is cause for excessive merriment; a slightly difficult or unpleasant task causes undue irritability. He likes to "show off"; enjoys using large words and making theatrical gestures. He is distractible; is easily diverted by influences outside the test situation. He works quickly and is not handicapped by time limits unless his attention is diverted. Judgment and discrimination are weak.

Keeping the characteristics of the two groups in mind an analysis of the individual test items reveals the following facts:

The Ship Test has a long time limit (5 minutes) so no serious handicap is presented on that score. It introduces a subject with which every individual is more or less familiar through either actual or pictorial experience. The parts are of similar size and shape so that the problem of spatial orientation does not enter except as it is necessary to associate the proper parts of the ship itself. Patients generally do well in this item and its placement at the beginning of the

scale gives many patients confidence in their ability. The comparatively poor showing made on this item by the high manic depressive group can be explained by lack of interest because of the simplicity of material involved. The patient of high intelligence becomes impulsive while the lower groups find the material within their grasp but sufficiently stimulating to hold their interest.

The Manikin-Profile Test presents a problem which requires more thoughtful consideration in that the arms and legs of the manikin and the four pieces which make up the ear of the profile must be in the correct position or they do not fit well at the points of junction. The dementia praecox patient is not sufficiently interested to investigate and plan the problem through and is often satisfied with an incomplete response. The manic depressive is careless and impulsive and overlooks the finer details. However, the material is simple and familiar so that the item generally receives a high rating within the scale.

The Knox Cubes require, primarily, good attentional control and secondarily, good memory. Attentional control presents the most serious problem for the Dementia Praecox. On the other hand the more intelligent manic depressive quickly learns to apply tricks of association in remembering the combinations of the series (such as numbering or lettering the blocks) thereby reducing the status of the test to that of a memory span. The medium and low groups, failing to make use of such short cuts, become confused and lose interest.

Cube Construction, as a test, demands not only good concentration, but effective planning ability which is almost entirely lacking in the dementia praecox patient. His chief aim is to finish an annoying situation quickly and get it out of his way as soon as possible. Therefore, while the patient frequently presents a product similar to the model in general construction, the details are incorrect. The item requires too much persistent, integrated effort and attentional control for the Manic Depressive. After assembling the first set of blocks his interest has waned and he is ready to go on to something else. Hence

he acts impulsively and does not bother to check his results for errors.

The Drawings require attentional control and memory but are usually of more interest to the patient than the Knox Cubes and demand less forethought than the Cube Construction. They are therefore generally accepted with a greater show of enthusiasm by the patient than either of these two. The observation period is short enough so that the Manic Depressive does not lose interest and the Dementia Praecox can control his attention long enough to grasp the problem. For this reason the high groups of both types of patients do fairly well on the item. However, the lower groups fail to note details and present an inaccurate as well as incomplete response.

The Porteus Mazes rate low in all the groups. This item is the one which requires the most strict attentional control over a considerable period of time, together with effective planning and forethought. Rapidity of performance is also essential. These three factors are the most noticeably weak points of the Dementia Praecox patient in the psychometric situation. The Manic Depressive works rapidly but without forethought; finds himself crossing forbidden lines almost before he realizes he has begun to trace his way out.

The ability to grasp the significance of casual relationships is of great importance in the Healy Picture Completion Test, and the lack of such an ability is graphically illustrated by the fact that in the high group only 15% of the dementia praecox patients and 5% of the manic depressives receive no credit in the item as against 50% of zero scores in the low groups of the two classifications. Moreover, the problem is one of observation, judgment, discrimination, and logical reasoning ability which accounts for the discrepancy between the scores for the two high groups for, though the manic depressive is weak in judgment and discrimination, he has some contact with external stimuli, which the Dementia Praecox very frequently gives absurd responses in this situation.

In comparing the two types of patients as they appear in the psychometric situation we see that the manic depressive makes slightly higher scores but also has larger discrepancies within the scale. The dementia praecox is generally more consistent although working far below his potential level in performance items. While the Manic Depressive may more nearly approximate his native level on one or two items he does so poorly on others that his average rating is comparable to the Dementia Praecox.

Hence we see the need for interpretation of psychometric variability. The I. Q. computed for each scale is nothing more or less than an average and while two patients may make identical average scores, upon investigation the factors which influence the individual items may be entirely different. The I. Q. which, perhaps unfortunately, has come to be looked upon as the ultimate factor in testing, is of far less importance in an analysis of the patient than the intra-scale variability.

#### **CASE CLOSED—TREATMENT INADVISABLE**

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Though psychiatry has had a specialized professional organization, the American Psychiatric Association, for about 95 years, it was not until 1926 that the American Association of Psychiatric Social Workers was formed. It is a young field as trained psychiatric social workers have been in mental hospitals and psychiatric clinics for only about 25 years. This period has been marked by constant and rapid changes in the techniques of social case work. During this time a systematic approach to the understanding and treatment of individual problems has been worked out. The social "history" or initial investigation was and still is considered the first step in understanding the individual personality and guiding treatment. We were more aware of the information desired than of methods of securing it. The patient's confidence was sometimes lost or

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his relationship to the organization injured in order to secure this information.

Gradually techniques have been worked out and the emphasis shifted to the inter-relationship of study and treatment processes and a greater awareness of the patient's feelings realizing that often they are of greater concern to him than his external situation. It is necessary that these techniques become an integral part of a worker's equipment but that at no time do they become predominant in importance, for the patient's needs must always be foremost and guide every interview. The real test of the use of technique is in helping the patient meet his needs.

Patients' needs differ greatly and must be carefully studied before any plan for case work is formed. At first we were so aware of our responsibility to "treat" or assist in a cure that we attempted to "treat" every problem presented—here "treat" is used not in the sense that psychiatrists use it, but in the social sense—meaning social case work. Gradually we have learned that it is not always advisable to carry on social treatment in every case and that even though we recognize certain needs of the patient we also have discovered that in helping these or bringing them to the awareness of the patient or his family we may unlock greater needs to which the patient may not be able to adjust as readily—hence increasing his problem: At other times it may be that the community is not sufficiently interested or alert to the problem to give the necessary moral or financial support necessary to accomplish the desired result and it is best not to begin treatment than to have to drop it in midstream.

There are other casual factors which one cannot change—such as the unemployment situation which is the direct cause of some of the problems, vocational old age, inability on the patient's part to change certain fixed attitudes, parent-child relationships, etc., as well as certain organic causes.

I have in mind one family that has been known to all the local agencies. When they accomplished nothing someone decided that the mother should be referred to the Mental Hygiene Clinic. Granted, that to all appearances all are in need of thorough clinic study, the children are very much retarded in their mental development and the mother

is incapable of following the simplest directions in caring for them. This family of five live in two rooms. They have a small old stove, two broken-down chairs, a table, and two beds, also an old carriage for the baby. Everything appears sordid and dirty. Whenever a nurse or social worker calls the mother always says she has been so busy she hasn't had time to do her work. When the baby was very ill they refused hospital care and when a nurse called the next day to give care, discovered that the medicine left by the doctor had not been given.

The mother was given clothing for the children at Christmas time but asked for more three weeks later and when the nurse questioned what she had done with the other articles she said they were all dirty. Her husband declares that there is nothing the matter with the members of his family and that when there is he will take them to a physician. He is a steady worker, earning an adequate wage for this family but seems content to live in filth and refuses to rise above this level or allow anything done for his children.

Suppose the mother and children are examined at the Mental Hygiene Clinic without his consent and are found to be feeble-minded as thought, there is no way of carrying out the recommendations for the husband and father will refuse to allow commitment to Delaware Colony for the Feeble-minded or sterilization for the mother and these recommendations cannot be carried out without his consent unless the case is taken into court. The city officials who know this family have decided to do nothing and the Mental Hygiene Clinic is without any legal authority. The community is not ready to give any moral backing to change present conditions.

Jane, age eight, was referred to Mental Hygiene Clinic because she is not doing passing work in second grade and needs special coaching. Her family refuses to allow her transfer to an opportunity class for this, as four older children in the family had no difficulty in school. Therefore, they believe it must be the fault of the school and they ask that the teacher give her special attention in the regular grade. No one can persuade patient to talk in school for days at a time and she refuses to take part in school activities.

Mental Hygiene Clinic study reveals a very

much pampered child always given her own way because she was sickly until the past year. She was taken out of school in first grade because she didn't like her teacher, who made her "nervous." At home we find that patient's mother has been a semi-invalid during most of patient's life. She is of a very "nervous" temperament, very excitable, always humored and all her life she has had temper tantrums when she refused to speak for hours at a time.

Because of the mother's physical illness it does not seem advisable to work directly with her and when any attempt is made to give suggestions to other members of the family everything is referred to the mother for she dominates the household. Patient is copying mother's behavior and if we criticize it or attempt to bring about a different attitude and handling of the problems we are directly criticizing the mother and may disrupt the family solidarity which exists, causing a more serious problem—so it seems best to let the school handle the problem as best it can directly with patient and give only general suggestions, mostly in the form of encouragement to the family.

James, age 18, is a senior in high school. He has done good work until the past few months. At present his teachers note a marked slump in his work and attitude and his behavior is so unnatural that they believe he is in need of a mental examination and immediate treatment, yet his parents refuse to recognize or admit any change and will not allow the examination. Because of parent-child relationships and the futility of attempting any treatment without the consent and cooperation of the parents, nothing can be done for this boy in what seems to be the beginning of a mental illness. Compulsory examination under such circumstances might have a destructive effect on patient and would prevent the possibility of any work with the parents in the future.

The Psychiatric Social Worker views the patient as a member of a family and community as well as a patient in a mental hospital or clinic. Aside from her relationship to him she has a definite relationship to his relatives which may have much value both to the patient and the relatives. She views herself as a member of the professional staff of

the hospital or clinic, with graduate professional education and experience of a different kind from that of the psychiatrists and as one with a particularly close relationship with the community and its social agencies and other professional workers whose training and experience is in the main similar to her own. Psychiatric Social Workers may be said to extend the psychiatrists' function, while they provide a distinctive type of professional service to patients examined and treated by psychiatrists as well as to their families.

### HELPING THE BABY TO GROW UP EMOTIONALLY

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What a delight is the well adjusted, happy adult who is able to meet the actualities of life. Contrasting with this is the misery and unhappiness caused by emotionally retarded grown-ups. Why are many adults emotionally immature—selfish, inconsiderate of others, avoiding responsibilities, having modified temper tantrums and indulging in attention getting behavior?

Look among your acquaintances and relatives. How many times have you been humiliated by some adult's temper outburst and shook your head in disgust at his childlike behavior? You can recall a man who always has to be the center of attention and a woman who cries, faints, or develops a headache in an effort to have her own way. And everyone has friends who get intoxicated when life is too difficult. When these grown-up children misbehave we think and sometimes exclaim, "Why don't you act your age?"

Could the retardation have been prevented if the child had been helped to grow emotionally? The modern parent sees to the physical development of the infant—consults the pediatrician about diet, calories, inoculation, sunshine and cod liver oil, and is cooperative with nursery schools and kindergartens. Yet frequently this same parent thwarts the child emotionally by indulging and overwaiting on him and otherwise violating fundamental principles of child training to such an extent that retarded development results.

Psychologists have given parents the sim-

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ple, basic principles of habit training (much of our emotional life is habit)—that of making desirable behavior pleasant and undesirable responses unpleasant. Added to this is the law of exercise or drill. That is, repetition of a response tends to make it automatic. Earlier parents did much cuffing as bears and lions do when their cubs are disturbing. But psychologists point out that usually ignoring is a more effective means of making an act dissatisfying to the small child than is the cuffing, especially if his desirable behavior is made pleasant by recognition and praise. The child has to have recognition and he will do that which brings him the most attention.

But watch the parents of the new baby. When the infant cries, the parents (and all the other members of the household) rush to him, cuddle him, and talk to him. In this way they reward the crying by making it very satisfying. When he is "good" they leave him alone and hurry to do other work.

A few days' practice of the crying bringing tender handling and caresses results in a well-formed habit. When this same infant is several months of age and sees his rattle at a most challenging distance, someone quickly hands it to him and thwarts his earliest desire to use his own efforts and achieve by struggling and finally getting the toy. Thus, the response is repeated and drilled until the potential valuable habits of enjoying effort and achievement and of working out his own problem is overthrown by habits of being waited upon.

When the infant is a little older temper tantrums follow any delay in his wants being supplied. When he toddles the temper outbursts are apt to be considered cute and, as a result, are given increased attention—this being pleasant fixes the habit more firmly. These same parents make over attention-getting behavior and fondle and pity the child when he gets his first bumps. They make much of his minor injuries and blame the rug or toy for causing the child to stumble. This gives the child a good start in being a babyish adult as the habits of receiving recognition for being ill or hurt, and of projecting the blame onto others are being formed and encouraged.

In some instances the increased negative habits reach a stage when they are annoying to the family. The parents show irritability,

are faultfinding and do much punishing. Sometimes a new sibling becomes the center of the family's interest and the child who has experienced indulging and overprotection feels pushed aside. Then added to his accumulation of undesirable habits is sibling rivalry and the beginning of resentments. Insecurity in his parents' affection develops. To the child, lack of security in the affection of the parents is as destructive as financial or professional insecurity is to the adult.

So the infant is on his way to develop into a despicable adult. His reconstructing may have to be done in a mental hospital. Occasionally a child is able to immunize himself against negative training and make a desirable adjustment despite his parents. Other children are saved from becoming social nuisances by finding security and guidance in some wholesome, well-adjusted adult outside of his home, as in a teacher, a minister or a recreational leader.

Fortunately society does have families who guide the development of desirable emotional traits. The writer knows several young parents who are helping the baby in his habits of happiness by smiling each time they go to him. Recently a mother told of suspending the infant's rattle in a tantalizing position, and watching the baby's face beam as he "wormed" to reach it. Another small boy's first words were "big man," which he exclaimed at his own achievements. He learned the term from his mother's praising his successes and telling the child he was a big man like his father. Many modern parents have the older child assist in the preparations for the new baby, and then after the arrival they treat the child as the "big boy" or the "big girl" as he helps to care for the infant sibling. A young father is justly proud of his idea of taking two older brothers (ages 5 and 6) to the hospital to wait with him for the mother's delivery of the new baby. Their happy faces as they gazed through the nursery window at the baby when he was twenty minutes old indicated there would be no sibling rivalry in that home.

What are some of the emotional habits which should have their beginning in earliest infancy—habits which will make a happy, well-adjusted child who is accepted by his playmates, and a well-integrated youth and



adult who likes people and is enjoyed and admired by them? The child along his way to adulthood and throughout his life will need initiative, resourcefulness, and pleasure in using his own efforts to achieve. He should early form the habit of wanting to grow up. He should have faith in himself and in others. He should enjoy companions and yet be self-sufficient when alone. There are endless other emotional habits which should have their beginnings in infancy. Much emphasis should be placed on habituating the child to meet his problems, face difficulties, adjust to them or overcome the handicap. The parents who can guide best the development of desirable emotional habits, are well adjusted themselves and will be able to give the child security in their affection. Also will they be superior patterns for the child to emulate.

(Continued from Page 118)

removed. Extensive bone cutting. Much trauma produced. Ten grains of sulfanilimide used and two sutures to close wound. Patient advised to keep ice bag over the area.

12-13-39. Slight swelling present but no pain.

12-15-39. Healing progressing rapidly.

12-18-39. Sutures removed.

#### Case III. C. H.

12-12-39. Infected roots of lower right second molar removed. Much trauma produced. Five grains sulfanilimide used plus compression. Uneventful recovery with no edema or pain.

#### Case IV. M. N.

12-14-39. Surgical removal of impacted third molar and infected second molar on lower right side. Much bone removed and much trauma produced. Ten grains of sulfanilimide. Operative time 1½ hours, 1 suture used.

12-15-39. Slight swelling and soreness of the temporal mandibular area, probably from malleting, but no pain in operative area. There is a slight involvement of the glands.

12-16-39. No pain in operative area, swelling diminishing and pain disappearing from temporal mandibular area.

12-18-39. Swelling and pain disappeared, healing uneventfully.

#### Case V. N. T.

1-15-40. Partially impacted lower left third molar removed. Much trauma produced and due to extensive bone removal. Five grains of sulfanilimide, plus metaphen solution placed into bone socket.

1-16-40. No pain present and slight edema over lower left molar area.

1-17-40. Same conditions persist.

1-19-40. Swelling disappeared.

#### Case VI. M. C. (Epileptic)

2-1-40. Completely impacted lower right third molar removed, there is an extensive incision and a great deal of trauma produced. Surrounding the tooth was a highly infected area. Ten grains of sulfanilimide and metaphen applied.

2-2-40. Slight edema, little pain, mouth wash containing hydrogen peroxide and sodium chloride, t. i. d.

2-3-40. Good prognosis.

2-4-40. Almost completely healed.

#### Case VII. W. O.

2-2-40. Devitalized, discolored upper central incisor of long standing, marked radiolucency at apex, evidence of healed fistula. Surgically reopened fistula, opened root canal and enlarged it. Irrigated with hot solution of sulfanilimide (aqueous), packed fistula with iodoform gauze, saturated with five per cent sulfanilimide in acetone, and sealed root canal.

2-3-40. Removed gauze packing, took smear with sterile cotton points, packed fistula with metaphen and two grains sulfanilimide, cleaned canal with alcohol and packed root canal with sulfanilimide.

Smear (2-2-40) shows pus cells with many organisms.

Smear (2-3-40) shows pus cells with no organisms.

2-5-40. Cleaned canal with alcohol, sulfanilimide had been absorbed, sealed root canal and repacked one grain sulfanilimide in fistula with metaphen covered with iodoform gauze.

Smear (2-5-40) no organisms, occasional pus cells.

2-7-40. Sterilized and filled root canal and repacked fistula with sulfanilimide.

2-9-40. Apicoectomy and packed with five

grains of sulfanilimide and metaphen and two sutures closed the wound.

2-23-40. X-ray shows no infection.

3-6-40. X-ray shows no infection, and marked bone regeneration.

#### CONCLUSIONS

1. The fact that no severe oral infections, such as cellulitis, osteomyelitis or "dry-sockets," have occurred in the hospital since this treatment has been instituted, shows that there is definite significance in the local application of sulfanilimide.

2. In many cases of severe infections, hemolytic streptococcus is stagnated at the apices. Upon the removal of these teeth, these toxins are liberated into the blood stream resulting in bacterial-endocarditis and many other severe systemic disorders. These have been curbed by the bacteriostatic action of sulfanilimide when applied locally.

3. There are other methods of applying the drug, such as, the tablet placed into the cavity en masse, or powder, without adjuvants. These have not proven their worth. It is felt that the technique at the Delaware State Hospital:

- a. Careful isolation after extraction.
- b. Swabbing with tincture of metaphen.
- c. Gentle packing of crushed particles of sulfanilimide, into socket.
- d. Protective measures (e. g. No mouth washes for six hours after application, sutures, iodoform gauze).

has proven to be very successful as the results definitely show.

*Du Pont Building*

#### JEFFERSON REUNION

During the convention of the American Medical Association in New York City, June 10 to 14, 1940 the Jefferson Medical College Alumni Association will hold its Reunion Banquet on Wednesday, June 12, at 7 o'clock p. m. at the Murray Hill Hotel on Park Avenue at 40th Street. Tickets are \$2.50 each.

Request for reservations may be addressed to me at that hotel.

But if you neglect to make reservations—come anyway.

THOMAS F. DUHIGG,  
Chairman Dinner Committee.

#### WOMAN'S AUXILIARY: A. M. A.

A last reminder to make your reservation for the 18th Annual Convention of the Woman's Auxiliary to the American Medical Association to be held at the Hotel Pennsylvania, New York City, June 10 to 14, 1940. New York has much to offer aside from the convention and we are sure you will not want to miss the opportunity of visiting New York this year.

#### MISCELLANEOUS

##### Science and Sal Hepatica

According to the radio advertising of Sal Hepatica, a scientific research conducted by leading medical magazines indicates that a high percentage of doctors always prescribe a saline laxative when treating a common cold. Of course the names of the leading medical magazines are not given. Part of the scientific story is the claim that Sal Hepatica is the "mineral salt laxative that does two things, not just one; it rids the body of waste and it also combats acidity." The history of Sal Hepatica is a strange commentary on the kind of science that used to be sold to credulous Americans. In 1911 Sal Hepatica was advertised as a uric acid solvent, said to be indicated in stomach, liver and kidney disorders, and especially beneficial in rheumatism and gout. In 1916 it was promoted because it was said to be useful in the treatment of pyorrhea. By 1929 it was called the American equivalent of European spas, and listeners were told that it was good also for headaches, colds, rheumatism and autointoxication. Actually there is nothing to Sal Hepatica according to recent analyses except Glauber's salt, baking soda and tartaric acid, common salt, sodium phosphate, a trace of lithium carbonate and water. Any doctor knows what that is good for and a variety of conditions which it is not good for. (*J. A. M. A.*, March 23, 190, p. 182).

#### Another Bald Fraud—"Linday's New Hair Compound"

The Bureau of Investigation of the American Medical Association reports that "Linday's New Hair Compound" has run afoul of the Post Office Department and been debarred from the mails. The fraud order was made to cover the firm names "Linday" and "Lin-

day Laboratory," New York. On Nov. 22, 1935 the Federal Trade Commission announced that it had ordered this company to cease and desist from making false and misleading representations for its product as a "hair restorer." Linday's New Hair Compound was advertised and sold through the mails as a treatment for growing hair on persons already bald as well as those inclined toward baldness. Government chemists who analyzed this preparation reported that it was essentially a mixture of lard, castor oil, cottonseed oil, cod liver oil, witch hazel, bay rum, saltpeter, beta-naphtha, kerosene and bergamot oil. The evidence showed that there is no known drug or combination of drugs which will correct all causes of loss of hair; that the product in question when applied as directed would not reach the so-called hair root or papilla; and that the promoter's representation that the mixture would "bring in a real re-growth of hair" on bald-headed persons was false and fraudulent. As the defendant did not offer acceptable evidence to show why a fraud order should not be brought against him, such an order was issued on June 16, 1939. (*J. A. M. A.*, March 23, 1940, p. 1097).

#### Misbranded "Patent Medicines"

The Bureau of Investigation of the American Medical Association reports that the following "patent medicines" have been the subject of prosecution by the Food and Drug Administration of the United States Department of Agriculture which enforces the Food, Drug and Cosmetic Act: *Bowman's Cramp and Diarrhea Mixture* (Bowman Bros. Drug Co., Canton, Ohio), chiefly alcohol, water, chloroform, menthol and a morphine-bearing drug. *Bromo Sed and Somno Sed* (Roche, Renaud Pharmaceutical Co., Inc., Fairhaven, Mass.), less than the 80 grains of strontium bromide and 2 grains of phenobarbital per ounce that the product was falsely labeled to contain. *Edwenil* (Spicer & Co., Glendale, Calif.), essentially magnesium and nitrogenous compounds in a solution of common salt, with small amounts of carbolic acid and silica. *Elmi Electro Mineralized Water* (Electro Mineral Co., Detroit), an artificially prepared mineral water containing approximate-

ly 0.7 per cent of Glauber's salt, a small quantity of alkali and negligible amounts of other mineral substances. *Hytest Cold Capsules* (International Drug Sales Co., Denver), in which no acetanilid was present, though the label claimed  $1\frac{1}{2}$  grains of it per capsule. *Sexol Tablets* (Erie Laboratories, Cleveland), essentially iron phosphate, tale, plant extractives and an alkaloid. (*J. A. M. A.*, March 23, 1940, p. 1097).

#### Evon and Murvel Tablets

The Bureau of Investigations reports that from Springfield, Mo., one Floyd German advertised and sold through the mails a number of preparations, apparently of varying strengths, for "delayed menstruation," including "Evons No. 1" (a combination of Ext. of Cotton Root Bark  $\frac{1}{2}$  gr., Black Hellebore  $\frac{1}{2}$  gr. Ferrous Sulfate Exsiccated, Powdered Ginger and Aloes, Oils of Tansy, Savin and Pennyroyal Each 1-8 minim); "Murvel Special Compound Tablet" (containing Ergotin (Bonjean) 1 gr., Ext. Cottonroot bark 1 gr., Aloe 1 gr., Ferrous Sulfate, exsiccated 1 gr., Oil Savin q. s.); "Evons No. 2 (Murvel Super 'X' Compound Tablets)" (a combination of Ferrous Sulfate 1 gr., Aloes 1 gr., Ergotin 1 gr., P. E. Cotton Root 1 gr., P. E. Black Hellebore 1 gr., and Oil Savin q. s.). German claimed, among other things, that "Evons Treatments are the peak of perfection, possessing the very latest improvements in every way . . . can be taken without fear of bad after effects, perfectly safe, harmless . . ." The expert medical testimony introduced at the hearing of this case brought out that abnormal delay in menstruation may be due to any one of a number of conditions, and that, regardless of the origin of delayed menstruation it is obvious that no one treatment, even from scientific sources, could correct all cases of this disorder, or even a considerable percentage of them. The Post Office Department found the business to be a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and a fraud order was issued against it on Dec. 28, 1938. (*J. A. M. A.*, March 30, 1940, p. 1283).



**BOOK REVIEWS**

Compendium of "Regional Diagnosis in Lesions of the Brain and Spinal Cord," by Robert Bing, M. D., Professor of Neurology, University of Basel Switzerland. Translated and edited by Webb Haymaker, M. D., assistant clinical professor of neurology, University of California. Pp. 292, with 125 illustrations. Leather. Price \$5.00. St. Louis; C. V. Mosby Company, 1940.

Any book which has passed through eleven editions and has been in use for thirty years has proved its worth. Dr. Bing has the ability of organizing his material in such a manner that it is easily attainable and readily remembered. The illustrations and diagrams clarify the text and are exceptional in that they simplify what could easily be a difficult subject. The book contains all the important factors in a relatively few pages. The book is not only of value to the specialist in neurology but should be on the desk of every practitioner who is interested in making a diagnosis of his neurological cases.

"Drug Addicts Are Human Beings," by Henry Smith Williams, M. D. Cloth. Price \$2.50. Shaw Publishing Company, Washington, D. C., 1405 Eye Street, N. W., 1940.

This book, written in an interesting fashion, reveals many problems which the medical profession has felt have existed for many years. Prosecuting the conscientious physician for his treatment of the drug addict has merely increased the problem of the drug racket. He presents the necessity of treating the drug addict as a patient and not as a criminal. The horror with which the public views these unfortunate victims should be eradicated. The book is of extreme interest to the practitioner but should be read by every intelligent adult. From the facts presented, it would seem that radical steps should be taken to correct the situations which now exist. I can only state that the book cannot be too vividly read. Nowhere else can we find facts so clearly and accurately presented.

## SILVER PICRATE

*Wyeth*

**HAS SHOWN A CONVINCING RECORD\* OF  
EFFECTIVENESS IN ACUTE ANTERIOR URETHRITIS**

**due to *Neisseria gonorrhoeae* • *Trichomonas vaginalis*  
*Monilia albicans***

Silver Picrate is a crystalline compound of silver in definite chemical combination with picric acid. Dosage form for use in anterior urethritis: Wyeth's Silver Picrate Crystals in an aqueous solution of 0.5 percent.

*Supplied at all pharmacies in vials of 2 grams*

Complete literature on Silver Picrate as used in genitourinary and gynecological practice will be mailed on request.

\*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, *AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES*, Vol. 23, No. 2, pages 201-206, March, 1939.

**JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA, PA.**

